



TransForum  
Louis Pasteurlaan 6  
2719 EE Zoetermeer  
Postbus 80  
2700 AB Zoetermeer  
079-3470910  
[www.transforum.nl](http://www.transforum.nl)

Layout Drupsteen + Straathof  
Druk drukkerij A2  
Foto Imagro Images

The Mobilisation of Sustainable Consumption

WORKING PAPERS NO 1



# The Mobilisation of Sustainable Consumption



**WORKING PAPERS NO 3**

# Introduction

The Netherlands traditionally has a strong agro-food sector. The post-war development of knowledge was directed towards high-productivity agriculture. While this approach was very successful, it has now become apparent that there is a drawback to this success. Specialization not only leads to economic profit, but also to environmental pressures and encroachment on public spaces. The agro-food sector is running into ecological and social barriers. There is a clear need for a more sustainable development in the sector, that gives attention to not only 'prosperity', but also to 'planet' and 'people'.

TransForum was created to address this challenge. The needed development calls for innovations and new insights. Therefore, TransForum has a double goal: to demonstrate, together with entrepreneurs that there are viable new pathways, and to prove, together with knowledge institutions, that the needed knowledge can be delivered.

We try to deliver these results in a combination of a practice program and a scientific program. The programs are meant to deal with three main obstacles in a route towards sustainable development in agriculture. First, there is a tendency to only search for new potential within your own sector (in business) or discipline (in science). Second, there is a strong bias on the function of agriculture in relation to regional development, blocking new combinations of functions. Third, in almost all explorations the value added is supposed to be in the primary production of the chain. Possibilities further in the chain are overlooked, and 'knowledge about primary production' is not seen as an asset. We try to tackle these obstacles by creating consortia of people from business, knowledge institutions, (local) authorities and societal organizations.

The scientific program is meant to address knowledge questions that arise from the practice projects. To that end a division into five sub themes is developed that reflect different aspects of the innovation process. These themes are: (1) Images of sustainability, (2) Inventions for a sustainable agriculture (3) Organization of Innovation and Transition (4) Mobilization of Sustainable Consumption and (5) Design of an Innovation-Enhancing Environment.

This publication contains a number of commissioned position papers that were helpful to focus the scientific program. However, we feel that the content of these papers deserves broader attention. We hope that after reading them, you will agree.

Henk van Latesteijn  
General Manager TransForum

# Mobilisation of sustainable consumption

*Prof.dr.ir. J.C.M. van Trijp  
Wageningen University & Research Centre*

The scientific theme “Mobilisation of sustainable consumption” focuses on the demand side of sustainability and the activities of actors close to, and including, the end consumer and citizen. Autonomous consumer demand for more sustainable products and services is currently too weak for the market to self-regulate on purely economic incentives only. Complementary efforts are required in terms of social corporate responsibility of food companies and retailers, strengthening of consumer demand and citizen pressure and transitions at the farm level.

The position papers that have been commissioned focus on the role of farmers and firms in bringing about sustainable agriculture.

Ingenbleek, Crul, Frambach and Rietveld (2005) provide an overview of the marketing and strategy literatures on corporate social responsibility and from that develop a perspective on marketing strategies for sustainability in agriculture, arguing that market forces and sustainable development do not necessarily contradict. The paper addresses three important routes to stimulate CSR activity in agricultural firms: naming, shaming and pre-competitive efforts to change the rules of competition.

Pennings and Kalogeras (2005) focus specifically on the farm level strategic decision making to adopt sustainable production systems, a decision often requiring a drastic re-allocation of the farmer’s economic resources. The authors argue that the global shape of the utility function may be influenced by personal characteristics of the decision maker, and the firms environment.

Ingenbleek, Backus and Verhallen(2005) provide insights on value pricing capabilities as a means to base prices on customer value information. Value pricing capabilities are under the surface of many developments in agribusiness, such as a transition of food supply chains to food demand chains. Therefore, value pricing is also a promising price strategy for sustainability.

Together these papers provide an important perspective on the activity and decisions at the level of stakeholders “close to the end-consumer” in accomplishing the transition toward more sustainable consumption. They have been an important source of inspiration in the shaping of the final scientific program.

# Marketing Strategies for Sustainability

*Paul Ingenbleek, Liselore Crul, Ruud T. Frambach, and Bob Rietveld*

## **Affiliations**

Paul Ingenbleek is assistant professor of Marketing, Wageningen University, and scientific researcher at the Agricultural Economics Research Institute in The Hague, the Netherlands.

Ruud T. Frambach is professor of Marketing at the Vrije Universiteit Amsterdam, the Netherlands.

Liselore Crul is doctoral student of Marketing at the Vrije Universiteit Amsterdam, the Netherlands.

Bob Rietveld is doctoral student of Marketing at the Vrije Universiteit Amsterdam, the Netherlands.

## **Correspondence**

Paul Ingenbleek, Wageningen University, Marketing and Consumer Behavior Group, Hollandseweg 1, 6706 KN Wageningen, the Netherlands, phone: +31 317 482 719, Fax: +31 317 484 361, e-mail: Paul.Ingenbleek@wur.nl.

## **Acknowledgements**

The authors thank Mathew Meulenberg and Theo Verhallen for helpful comments on earlier drafts of this paper and TransForum for funding this research.

## Abstract

This paper analyzes the literature in marketing and strategy on CSR, and develops a conceptualization of marketing strategies for sustainability. The discussion of the relevant literature and the conceptualization that is based on it, suggest that market forces and sustainable development do not necessarily contradict. Responsible marketing strategies have to this respect a mirror function in the market: They show that responsible market offerings –either on the store, category, brand, or product level– can acquire a permanent foothold in the market. To grow beyond the segment of highly involved consumers, however, a value strategy promises more potential. Firms that set out to create superior customer value are most likely to generate superior profits and to use resources to improve relevant sustainability issues in the People and Planet domains on a larger scale. This is especially the case if the competitive advantage of the firm depends on marketing assets (such as brand names or relationships with customers), unique resources (that are difficult to imitate by competitors), and if resource inputs are critical to competitive advantage of firms (such as a strong position on the labor market). This process of improving sustainability issues is enhanced by stakeholder pressure, responsible competitors, and value-based rather than efficiency-based competition. To this respect, the process of “naming and shaming” is likely to stimulate sustainable development through market forces: positioning offerings that consumers perceive as sustainable, strengthening brand, category, and store images with sustainability attributes, and weakening those images that are considered undesirable for sustainable development. Given the central role of value-based competition in this process, strategic innovation is discussed as a central process of strategic change towards value-based competition. The paper discusses the implications for transition to sustainable agriculture and suggests directions for future research.

## 1. Introduction

“Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generation to meet their own needs.” This way, the World Commission on Environment and Development introduced the agenda for sustainable development (Brundtland et al 1987, p. 8). The call may be seen as a response to the post war period that was marked by a growth of population, consumption, and production. Gradually, the insights emerged that natural resources can be depleted, that environment and ecosystems are vulnerable, and that differences between North and South are increasing. Solutions with a short-term focus or a limited scope on environment or poverty alone were no longer seen as sufficient. To sustain resources for future generations one should aim for development in which improvements of an ecological, socio-cultural, and economic nature go hand in hand. This idea of sustainable development is comprehended by the World Bank in the Triple P-concept: People-Planet-Profit (Serageldin 1996; Serageldin and Steer 1994).

Although the call for sustainability predominantly emerged from shortcomings in the first two domains (social and ecological aspects), it seems that in many cases the economic component prevents development from becoming sustainable. On a micro-level, environment-protecting innovations are rejected by producers because of the cost increases associated with them. For the same reason many consumers prefer less-sustainable products for a lower price over more-sustainable products for a higher price. Similarly on a macro-level, the tension between economic growth and sustainability is an important hurdle in international treaties such as the Kyoto treaty. In a business environment that is increasingly marked by international competition (think for example of WTO agreements), governments can’t simply enforce enterprises to adopt sustainable production methods, without harming the competitive positions of these firms. Public policy therefore increasingly stimulates firms to search for creative solutions that enhance sustainable development (e.g. CEC 2001; World Bank 1992).

Therefore, it is important to understand the marketing strategies that are sustainable in terms of social, ecological and also financial aspects. In this paper we will provide a state of the art review of marketing and strategy literature on corporate social responsibility (CSR), in order to develop a conceptualization of different marketing strategies for sustainability. CSR refers to the obligations of the firm to society (Brown and Dacin 1997), or more specifically, the firm’s stakeholders (Clarkson 1995; Maignan and Ferrell 2004). As such, the domain of CSR may be broader than the domain of sustainability<sup>1</sup>. CSR is however a central concept in private efforts

<sup>1</sup> The Socrates database (cf. Sen and Bhattacharya 2001) distinguishes, for example, six domains of CSR: (1) community support (e.g., education and housing initiatives), (2) diversity (e.g. sex-, or race-based diversity record), (3) employee support (e.g., job security), (4) environment (e.g., pollution control, animal testing), (5) foreign operations (e.g., overseas labour practices), and (6) product (e.g., product safety, R&D/innovation).

that contribute to sustainability (Sen and Bhattacharya 2001; Smith 2003). Importantly, both concepts acknowledge that firms' investments in responsibility should go hand in hand with long-term profitability (Handelman and Arnold 1999; Grewal and Dharwadkar 2002). Although we will refer predominantly to examples from agribusiness, our conceptualization can theoretically be generalized across different industries.

In the following, we will first discuss the CSR literature, followed by a conceptualization of marketing strategies for sustainability. We will distinguish two groups of marketing strategies for sustainability: responsibility (differentiation on the basis of sustainability alone) and value strategies (differentiation on the basis of multiple consumer benefits). It is argued that value strategies have more potential to affect "mainstream" production than responsibility strategies. Subsequently, it is analyzed which factors motivate producers to include sustainability attributes in value strategies. Next, we provide a literature review on how firms can switch to new value creation strategies (strategic innovation). Finally, we will discuss the conclusions and implications including directions for future research and implications (with a specific interest in sustainable agriculture in The Netherlands).

## 2. Corporate Social Responsibility

While CSR seems to be more prominent than ever (according to Bhattacharya and Sen (2004) more than 80% of the Fortune 500 companies address CSR issues on their websites), the idea that business has societal obligations was evident at least as early as the nineteenth century (Smith 2003). Visionary business leaders built for example factory towns to provide workers and their families with housing, medical support, and education.

The first academic interest in what we now call CSR, started approximately 50 years ago (Bowen 1953). Given the few empirical studies on the effects of CSR other than its impact on a firm's financial performance (see for reviews Orlitzky et al. 2003, and Margolis and Walsh 2003a), there are however still many issues to investigate. Research on CSR effects on other stakeholder groups than shareholders has mainly focused on consumer responses to CSR (e.g., Brown and Dacin 1997, Klein and Dawar 2004; Sen and Bhattacharya 2001) and employee responses to CSR (e.g. Maignan, Ferrell and Hult 1999; Turban and Greening 1997). The literature on the conceptualization of CSR, on the other hand, is abundant (see for influential conceptualizations of CSR: Carroll 1979; Clarkson 1995; Wood 1991). In the following, we will go deeper into the concept of CSR, followed by an outline of the theoretical arguments for CSR. Subsequently we address the question why firms differ in their CSR policies and discuss the consequences of CSR that are found in empirical studies.

### *The CSR-concept*

One of the earliest conceptualizations of CSR stems from Howard R. Bowen's (1953) work *Social Responsibilities of the Businessman*. Bowen proposed an initial definition of the social responsibilities of businessmen: "It refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in term of the objectives and values of our society" (p. 6). The view of CSR as a social obligation has been advocated in later conceptualizations (e.g., Carroll 1979; Wood 1991) and contemporary marketing studies (e.g. Brown and Dacin 1997; Sen and Bhattacharya 2001). Carroll (1979), for example, distinguishes different types of societal obligations based on different societal expectations, i.e., (1) economic responsibilities (a firm must produce goods and be economically viable), (2) legal responsibilities (a firm must obey the law), (3) ethical responsibilities (a firm must follow ethical norms which go over and beyond legal requirements), and (4) philanthropic responsibilities (a firm must proactively give back to society). Another influential conceptualization stems from Wood (1991, p. 693), who defines CSR not only in terms of obligations, but also in terms of processes and outcomes: 'a business organization's configuration of principles of social responsiveness, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships (p. 693).

Clarkson (1995) is one of the first who argued that the notion of social obligation is too broad to facilitate the effective management of CSR. Clarkson (1995; see also Donaldson and Preston 1995; Jones 1995; Smith 2003; Maignan and Ferrell 2004) argues that businesses are not responsible towards society as a whole but only to those who directly or indirectly affect or are affected by the firm's activities, i.e., a firm's stakeholders (Freeman 1984). Stakeholders can be regrouped into four main categories (Henriques and Sadorsky 1999): (a) organizational stakeholders (e.g., employees, customers, shareholders, suppliers), (b) community stakeholders (e.g. local residents, special interest groups), (c) regulatory stakeholders (e.g., municipalities, regulatory systems), and (d) media stakeholders. According to the stakeholder view of CSR 'organizations act in a socially responsible manner when they align their behavior with the norms and demands embraced by their main stakeholders' (Maignan and Ferrell 2004, p. 6). This view of CSR clearly directs a firm's CSR efforts towards specific issues and desired impacts, which enhances the manageability and measurability of these efforts (Clarkson 1995). As Smith (2003, p.68) puts it: "CSR is fundamentally about obligations to stakeholders".

### ***Theoretical arguments for CSR***

In addition to the debate in the literature about 'to whom' an organization is responsible, the discussion on 'why' an organization should behave responsibly has also received attention. There are two complementary theories that explain why a firm should behave responsibly towards its major stakeholders: (1) resource-dependence theory (Pfeffer and Salancik 1978), and (2) institutional theory (DiMaggio and Powell 1983).

Resource-dependence theory states that "an organization must attend to the demands of those in its environment that provide resources necessary and important for its continued survival" (Pfeffer 1982, p. 193). Each stakeholder group has specific resources which differ in importance to the firm. More specifically, employees provide labor, expertise, and creativity; shareholders provide capital; customers offer their loyalty; and regulators can give permission to expand facilities (Maignan and Ferrell 2004). Stakeholders can provide resources to a firm that are needed for its long-term success, or withdraw them. The more critical the resources held by a stakeholder group are to a firm, the more power the stakeholder group has over the firm (Agle, Mitchell and Sonnenfeld 1999; Frooman 1999).

Institutional theory views companies as embedded in both the economic and institutional environments. The institutional environment refers to the cultural meanings, ideals, and accepted social norms associated with a given society or community. These norms usually serve as implicit and flexible guidelines (as opposed to explicit regulations) to which companies must adhere in order to maintain a 'social fit' with key stakeholders. When a company achieves this socio-cultural alignment it is considered to be legitimate or institutionalized (DiMaggio and Powell

1983; Suchman 1995). Legitimacy is "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed systems of norms, values, beliefs, and definition" (Suchman 1995, p. 574).

Handelman and Arnold (1999) have demonstrated the important role that legitimacy plays for a firm in obtaining support from its environment. Their study indicates that in general only those actions of the company that are perceived to be legitimate, will lead to supportive behavior. Deterioration in stakeholders' assessment of a firm's legitimacy would serve as a key warning that the firm is not adhering to the norms of the economic and institutional environment. Such information indicates that the firm offers its stakeholders not enough justification for its long term existence, and thus, stakeholders can find fewer reasons to offer the firm their resources. Furthermore, organizational studies indicate that organizations facing legitimacy challenges often lose their unrestricted access to markets, limiting strategic choice and perhaps causing them to become non-players in certain markets (Deephouse and Carter 2004).

In short, whereas resource-dependence theory emphasizes the need to address stakeholder issues because stakeholders possess critical resources, institutional theory emphasizes the need for organizations to play by the rules of a given society or community in order to obtain these resources. These theoretical arguments are recognizable in the main motivations for CSR that prevail in the literature (Wood 1991; Swanson 1995; Smith 2003). These motivations either stem from a firm's enlightened self-interest (the 'instrumental' perspective that has emerged from resource-dependent theory), or from a firm's desire to do good (the 'normative' perspective that has emerged from institutional theory). A firm's motivation to engage in CSR might reflect a mixture of these motivations (Smith 2003). Companies who are more driven by a desire to do good will deal with certain issues independently of any stakeholder pressure: they deal with an issue because they believe it is 'the right thing to do'. Companies who are more driven by instrumental motivations will deal with specific issues in order to maintain their legitimacy in the eyes of important stakeholders whose resources are needed for the firm's long-term survival (Maignan and Ferrell 2004).

### ***Why do firms' CSR policies differ?***

Since stakeholders provide resources and grant legitimacy to organizations that are both essential for their long-term survival, CSR is presumably important to every company. In practice, however, CSR policies of firms differ widely (Smith 2003). In the literature three types of explaining factors are found: industry differences, stakeholder differences, and firm differences.

Industry differences. Rehbein, Waddock and Graves (2004) found evidence in their study of shareholder activism that certain industries are more vulnerable than others. For example, two

industries that receive most activist attention for their environmental and energy practices are refining, rubber and plastic, and telephone and utilities. An industry with few obvious environmental problems such as wholesale hardly gets attention from shareholder activists.

**Stakeholder differences.** As pointed out earlier, a firm can have many stakeholders whose demands may vary widely and may even conflict. What is perceived to be legitimate organizational behavior in the eyes of one set of stakeholders may not be legitimate in the eyes of another stakeholder group (Suchman 1995). Consequently, company actions that stimulate the flow of resources from one set of stakeholders might inhibit company access to resources from another group. An obvious example is the conflict of interest that arises when a firm eliminates the training and travel budgets of its employees, in order to cut cost and be able to deliver on a profit forecast promised to its shareholders. Another example comes from organic agriculture where the gains in animal welfare of animals that are kept outdoors should be weighted against increased environmental pressure. The more powerful a stakeholder group is because of the critical resources it possesses, and the greater the ability of stakeholders to cooperate on an issue (and thus form a 'block'), the more willing a company will be to have a positive impact on the issue(s) of concern to that stakeholder group (Maignan and Ferrell 2004).

**Firm differences.** Firms may respond differently to societal issues. These differences may be explained from differences in size, social norms, and interactions between the firm's stakeholder orientation and its stakeholders.

First, with respect to size, Rehbein, Waddock, and Graves (2004), empirically find that larger companies receive more attention from pressure groups, often regardless of their performance on a particular stakeholder issue.

Second, differences in organizational norms can influence CSR responses. Although oil companies Shell, BP and Exxon face similar stakeholder pressures, differences in organizational norms cause big differences in how each responds to these pressures. Shell ([www.shell.com](http://www.shell.com)) and BP ([www.bp.com](http://www.bp.com)) have chosen to adopt a true stakeholder orientation and to actively work with stakeholders to resolve issues, while Exxon (Economist 2003) has only one measure it wishes to be held accountable for: its profit performance. To this respect, the concept of stakeholder orientation was introduced by Maignan and Ferrell (2004). They define stakeholder orientation as "the degree to which a firm understands and addresses stakeholder demands" (p. 10). A stakeholder orientation consists of three sets of behavior – based on Kohli and Jaworski's (1990) concept of market orientation: (1) the organization-wide generation of intelligence pertaining to the nature of stakeholder groups, norms and issues, along with the evaluation of the firm's impact on these issues; (2) dissemination of stakeholder intelligence, i.e., facilitating flows of this information among organizational members; and (3) responsiveness to stakeholder intelligence, i.e., implementing initiatives to actually meet stakeholder demands.

Third, an interaction between the firm's stakeholders and its stakeholder orientation may ex-

ist (Maignan and Ferrell 2004). The degree to which an organization is stakeholder oriented is likely to be influenced by stakeholder power and stakeholders' ability to cooperate with the firm. Vice versa, this cooperation is likely to positively influence a firm's impact on the issues raised by stakeholders.

### ***Consequences of CSR***

In examining the consequences of CSR, research has predominantly focused on economic performance (Margolis, Walsh, and Weber 2003). Research on how CSR affects other types of performance is scarce. As a result, little is known about the actual impact of CSR activities on specific stakeholder issues and societal welfare in general. More is known about the CSR effects on consumers, employees, and financial performance. For an overview of the most important empirical studies in each area, see Table 1. The key findings are discussed below.

TABLE 1: Overview Most Important Studies on CSR Effects

Authors	Objectives	Proposed Theory	Tested Variables	Method (n)	Key Results
(1) Consumer Brown and Dacin (1997)	To explore the influence of two types of corporate associations – corporate ability (CA) and corporate social – on consumer responsibility (CSR) product evaluations.	Corporate associations serve as an important context for the evaluation of a company's product.	CA and CSR associations, corporate evaluation and product evaluations.	Two surveys (163, 127) and one experiment (200)	CSR associations positively influence product evaluations via corporate evaluation.
Creyer and Ross (1997)	To explore the relationship between firm behavior and purchase intention	Consumers are expected to use an aspiration-based reference point when evaluating firm behavior	Importance of ethicality, willingness to reward / punish, expectations re. ethicality of corporate behavior	Survey (280)	<ul style="list-style-type: none"> <li>Ethical behavior is rewarded by a willingness to pay higher prices</li> <li>Unethical behavior is punished by a demand for lower prices</li> </ul>
Handelman and Arnold (1999)	To provide evidence of the main effects of institutional (CSR) actions and the interaction effect between CSR and economic actions.	Based on institutional theory companies need to take both the task and institutional environment into account in order to achieve legitimacy and thus customer support.	Store image attributes (performative actions), CSR (institutional actions), legitimacy and support (word-of-mouth, purchase intention)	Scenarios (216)	<ul style="list-style-type: none"> <li>CSR activities have a direct, positive effect on support</li> <li>Companies who fall below a certain threshold of responsible behavior are hampered in the effectiveness of their economic-oriented actions.</li> </ul>
Klein and Dawar (2004)	To examine the possibility that the CSR halo affects consumers' attributions in a product-harm crisis.	CSR beliefs moderate consumers' perception of the locus of the crisis event as internal or external, whether they see it as stable or temporary, and whether they believe it to have been controllable or not.	Product crisis, CSR, locus, stability, control, blame, product evaluations, buying intentions, importance of CSR in decision-making	Scenarios (150, 150)	<ul style="list-style-type: none"> <li>CSR associations have a strong and direct influence on (1) attributions and (2) brand evaluations in a nonproduct evaluation setting</li> <li>Attributions mediate the effect of CSR on evaluation only for CSR-sensitive consumers</li> <li>A negative CSR image has a stronger impact on attributions than a positive CSR image.</li> </ul>
Sen and Bhattacharya (2001)	To understand when, how and why consumers react to CSR	Consumers reactions to CSR are contingent on the congruence between consumer and company – which in turn is moderated by CSR support	CSR information, CSR support, CSR domain, C-C congruence, company evaluation, purchase intentions, new product quality information, CSR-CA beliefs	Two experiments (277, 320)	<ul style="list-style-type: none"> <li>Both company-specific factors and individual-specific factors are key moderators in consumers' CSR responses</li> <li>All consumers react negatively to negative CSR information, while only those consumers supportive of the CSR issues conveyed react positively to positive CSR information</li> </ul>
(2) Employees Maignan, Ferrell and Hult (1999)	To understand the nature of corporate citizenship (CC), its cultural antecedents and its business benefits.	Organizational culture guides the way managers address CSR issues for their company and the way these issues are addressed influences business outcomes	Market, humanistic and competitive orientation, CC, employee commitment, customer loyalty, business performance	Two surveys among managers (229, 154)	<ul style="list-style-type: none"> <li>Market and humanistic oriented cultures encourage CC</li> <li>CC is found to be systematically associated with enhanced levels of employee commitment, customer loyalty and business performance</li> </ul>

Authors	Objectives	Proposed Theory	Tested Variables	Method (n)	Key Results
(Sanchez and Brock (1996)	To explore the outcomes of perceived discrimination among minorities and its consequences for diversity management	Perceived discrimination will act as an incremental source of work stress – going over and above role conflict and ambiguity, and will adversely contribute to employee outcomes	Role conflict, role ambiguity, perceived discrimination, organizational commitment, job satisfaction, work tension	Survey (139)	<ul style="list-style-type: none"> <li>Perceived discrimination has an incremental negative effect on organizational commitment and job satisfaction and a positive relationship with work tension.</li> </ul>
Smidts, Pruyn and Van Riel (2001)	Organizational communication to employees – both in terms communication content and climate – augments the effect of external organizational prestige on employee identification.	External organizational prestige and the way in which adequate information is communicated towards employees (i.e., communication climate) influence employee identification	Adequacy of information on (1) organization and (2) role of employee, communication climate (openness, supportiveness, participation), external organizational prestige, organizational identification	Survey (1,127)	<ul style="list-style-type: none"> <li>External organizational prestige enhances employee identification</li> <li>The effect of adequacy of information on employee communication is mediated through communication climate</li> </ul>
Turban and Greening (1997)	Investigate the relationship between socially responsible firms, their reputation and their attractiveness to potential applicants.	A firm's CSR provides potential applicants with signals about the organization's value system, which influence applicants' perceptions working conditions and subsequent attractiveness to the organization.	Corporate Social Performance (CSP), Reputation, Organizational Attractiveness as an employer	Secondary data was used to establish a firm's firm's CSP; 189 companies were rated on reputation and attractiveness	<ul style="list-style-type: none"> <li>Firms higher on CSR have more positive reputations than firms lower on CSR</li> <li>Firms higher on CSR are more attractive employers than firms lower on CSR</li> </ul>
(3) Financial performance Aupperle, Carroll and Hatfield (1985)	Investigate the relationship between social responsibility and profitability.	Different orientations on CSR (following Carroll's categorization of economic, legal, ethical and discretionary components of CSR) will lead to variation in profitability	Orientation toward CSR and profitability (ROA)	Forced-choice survey instrument (241)	<ul style="list-style-type: none"> <li>Varying levels of CSR orientation were not found to correlate with performance orientation</li> </ul>
Frooman (1997)	Examine the link between socially irresponsible and illicit behavior and shareholder wealth	Enlightened self-interest as a reason for corporation to act in a socially responsible and lawful manner as this is in the long-term interest of a firm's shareholders.	CSR events and stock prices	Meta-analysis of 27 event studies	<ul style="list-style-type: none"> <li>Shareholder wealth is decreased when firms act in a socially irresponsible or illegal manner.</li> </ul>
Hillman and Keim (2001)	Explore the link between shareholder value, stakeholder management, and social issues.	Building better relations with primary stakeholders could lead to increased shareholder wealth by helping firms develop intangible, valuable assets which can be source of competitive advantage.	Shareholder value creation (Market Value-Added or MVA), stakeholder management (SM), social issue participation (SIP)	Secondary data were used to evaluate 308 firms on each variable.	<ul style="list-style-type: none"> <li>There is a positive link between shareholder value and stakeholder management</li> <li>There is a negative link between shareholder value creation and social issue participation.</li> </ul>

Authors	Objectives	Proposed Theory	Tested Variables	Method (n)	Key Results
Margolis and Walsh (2003)	Investigate the link between Corporate Social Performance and Corporate Financial Performance	Using corporate resources for social issues not related to primary stakeholders may not value for shareholders.	Corporate Social Performance and Corporate Financial Performance	Meta-analysis of 127 studies that have investigated the link between and CFP	<ul style="list-style-type: none"> <li>• There is a positive correlation between a company's social performance and its financial performance.</li> </ul>
Orlitzky, Schmidt and Rynes (2003)	Investigate the link between Corporate Social Performance and Corporate Financial Performance	<p>(1) CSP increases managerial competencies, contributes to knowledge about the firm's market, social, political, technological and other environments, and thus enhances efficiency, and</p> <p>(2) CSP helps the firm to build a positive reputation and goodwill with its external stakeholders</p> <p>(3) Prior high levels of CFP provide slack resources necessary to engage in CSR</p>	Corporate Social Performance and Corporate Financial Performance	Meta-analysis of 52 studies	<ul style="list-style-type: none"> <li>• There is a positive correlation between a company's social performance and its financial performance.</li> <li>• There is a bidirectional causality between CSP and CFP</li> </ul>
Russo and Fouts (1997)	Investigate the link between environmental performance and economic performance	A resource-based view of the firm has been adopted to theorize a positive link between environmental and economic performance. This link is expected to be moderated by industry growth	Environmental performance, economic performance (ROA) and industry growth	Secondary data were used to evaluate 243 firms on each variable.	<ul style="list-style-type: none"> <li>• Results indicate that "it pays to be green"</li> <li>• This relationship strengthens with industry growth</li> </ul>

*Consumers.* Recent research suggests that there is a positive relationship between a company's CSR actions and consumers' attitudes toward that company and its products (e.g., Brown and Dacin 1997; Creyer and Ross 1997). Sen and Bhattacharya (2001; 2004) have extended this stream of research by examining when, how and for whom specific CSR initiatives work. Their research reveals four key findings. First, consumers differ significantly in their responses to CSR activities; what works for one consumer segment may not work for another. Second, the impact of CSR activities on 'internal' psychological states of consumers (e.g., attitudes, attributions) is greater and easier to assess than 'external' behavioral outcomes (e.g., purchase behavior, word-of-mouth). Third, the company is not the only one that benefits from engaging in CSR initiatives. CSR activities may contribute to consumer well-being and to the awareness and attitudes of people toward the issues that CSR-activities deal with. TPG's collaboration with the UN food program may, for example, have increased the awareness and attitudes of people regarding the world food problem and the UN. Finally, consumers are more sensitive to 'irresponsible' than 'responsible' corporate behavior. In other words: there is an asymmetric effect and 'doing bad' hurts more than 'doing good' helps. This finding is supported by other studies. Handelman and Arnold (1999) demonstrate that companies who fall below a certain threshold of responsible behavior are hampered in the effectiveness of their economic-oriented actions. Klein and Dawar (2004) show in their study of halo-effects of CSR in a product-harm crisis that a negative CSR image has a stronger impact on attributions than a positive CSR image.

*Employees.* In general, acting responsibly towards employees leads to favorable outcomes such as employee commitment and increased levels of employee identification with the organization (Maignan, Ferrell and Hult 1999; Smidts, Pruyn and Van Riel 2001). Perceived discrimination, on the other hand, has a negative effect on organizational commitment and job satisfaction (Sanchez and Brock 1996). Another interesting finding stems from research of Turban and Greening (1997): firms that are perceived to have an overall positive CSR track record are more attractive employers to potential applicants than firms with a less favorable record.

*Financial performance.* Both Margolis and Walsh (2003) and Orlitzky, Schmidt and Rynes (2003) have found – based on a meta-analysis of respectively 127 and 52 studies investigating the link between corporate social performance (CSP) and corporate financial performance (CFP) – that 'CSP and CFP are generally positively related across a wide variety of industry and study contexts' (Orlitzky et al. 2003, p. 406). Explanations for this positive link are: CSP (1) increases managerial competencies, (2) contributes to knowledge about the firm's market, social, political, technological and other environments, and thus enhances organizational efficiency. In addition, CSP helps the firm to build a positive reputation and goodwill with its stakeholders (e.g., Hillman and Keim 2001; Orlitzky et al. 2003; Turban and Greening 1997). Frooman (1997) demonstrates that shareholder wealth is decreased when firms act in a socially irresponsible or illegal manner. There is also a negative link between shareholder value creation and the use

of corporate resources for social issues unrelated to primary stakeholders (Hillman and Keim 2001). This underlines the importance of adopting the stakeholder perspective of CSR in order to establish a positive link between CSR and financial performance.

To summarize, in a consumer context CSR tends to be more a necessary condition for a company than something that leads to positive outcomes per se. Sen and Bhattacharya (2001) indicate, however, that consumers who are supportive of the CSR domain chosen by the company react positively to CSR initiatives. In an employee context, CSR generally leads to positive results, both in terms of current and future employees. Finally, there is a positive link between CSR and financial performance under the condition that companies use their corporate resources to address key stakeholder issues that are closely linked to the core processes of the firm.

# Marketing strategies for sustainability

## *Strategy, marketing strategy, and marketing strategies for sustainability*

Strategy can be defined as 'the –implicitly or explicitly- chosen route by management to accomplish the company goals it has formulated, calculating for a changing environment and ensuring the fit between the organization and the environment' (Nijssen and Frambach 2001, p. 15). To this respect, corporate strategy (strategy of the entire corporation), and business strategy (strategy of a specific business unit within that corporation) are distinguished from functional strategies (strategies of functional areas like production, purchasing, R&D, and marketing within that business unit). Marketing strategy thus is a functional strategy that translates the business strategy into marketing mix elements (such as products, prices, communications, and distribution) through processes of segmentation, targeting and positioning. However, because marketing is on the borderline between the firm and its market, it is often involved much more in formulating general business strategies than other functional areas (Nijssen and Frambach 2001).

A marketing strategy for sustainability can now be defined as a functional strategy of a business that translates (and in return influences) the business strategy into a marketing mix in such a way that it contributes more to the ecological and/or socio-cultural domains of sustainability than the strategies that competitors pursue, while aiming at superior financial performance.

The concept of marketing strategy for sustainability evaluates sustainability relative to competitors. With respect to the P of profit this is in line with Hunt and Morgan's (1995) argument that in firm practice there is no possibility for firms to maximize profits because firms lack the information to do so. Instead they aim to achieve superior financial performance, which is financial performance compared to some point of reference, often a close competitor. Superior financial performance stems from market positions of competitive advantage: a position on a market or market segment that is more favorable than those of competitors in terms of the perceived benefits that are offered to customers, and/or the efficiency by which these benefits are produced (Hunt and Morgan 1995).

Our definition however suggests that not only Profit, but also People and Planet are evaluated relative to competitors. Here we follow the same line of reasoning as with respect to profits: as firms lack the ability to evaluate the maximization of profits, they are unable to determine a maximum contribution to ecological or socio-cultural issues. They can however pay more attention to it than competitors do. If they do so in a manner that also generates profits, it contributes to sustainable development (Brundtland et al. 1987).

Marketing strategies for sustainability do not by definition contribute to all aspects of sustainability. As suggested before, which issues the firm specifically deals with may depend on its industry, its stakeholders and its organizational characteristics. As argued both by Smith (2003) and Bhattacharya and Sen (2004), developing the right CSR strategy requires an understanding of what differentiates an organization – its mission, values, and core business activities. In practice, these are likely to be the ecological and/or socio-cultural issues that the firm will harm the most by fulfilling its mission (these will often be the issues that stakeholders hold the business responsible for).

## *The different marketing strategies for sustainability*

Sustainability brings about higher costs for which the consumer – being the ultimate customer in a supply chain – should pay the price.<sup>2</sup> A marketing strategy for sustainability therefore requires in the end consumer choices in which the consumer includes its concerns about sustainability issues (Meulenbergh 2003). We argue that these concerns may be expressed in four consumer choices: (1) the choice for the store where they make their purchases, (2) the product categories that they choose to buy (or refuse to buy), (3) the brands they prefer within those categories, and (4) the final choice for a certain product. The distinction between these four choices is not uncommon. Marketing literature has developed for example different decision models for these choices (cf. Leeflang, Wittinck, Wedel, and Naert 2000).

With respect to the decision how firms can position themselves as compared to competitors in a marketing strategy for sustainability, two options can be distinguished: those that differentiate only on the basis of product attributes that deal with the sustainability issues, and those that differentiate also on other product attributes. In the first case, a market offering is aimed to be essentially the same as the mainstream product, but more sustainable. In the latter case, the product differs from competitors' product in various ways.

Combining the customer and competitor dimensions reveals eight marketing strategies for sustainability (see Table 2). Strategies that differentiate on sustainability alone are labeled responsibility strategies, whereas strategies, in which sustainability is one out of several attributes to differentiate the offering, are labeled value strategies. We will discuss these groups of strategies below.

<sup>2</sup> Firms may be active in business-to-business markets, but according to the rationales of demand-driven chains (Verhallen, Gaakeer, and Wiegerinck 2004), it is their mission to strengthen the market position of a customer company, that can in turn strengthen its position at the next stage of the chain, leading in the end to a stronger position on the consumer market (Anderson and Narus 1999).

Table 2: Marketing strategies for sustainability

	Consumer choice that the strategy targets			
Differentiation:	Store choice	Category choice	Brand choice	Product choice
Sustainability only	Responsible store strategy	Responsible category strategy	Responsible brand strategy	Responsible product strategy
Sustainability along other attributes	Valuable store strategy	Valuable category strategy	Valuable brand strategy	Valuable product strategy

The conceptualization accounts for the fact that the final marketing strategy is unique for every firm, because the processes of segmenting, targeting, and positioning are different. Different businesses may use different bases to segment the market into different relatively homogeneous groups. They may also differ in the choice of market segment that they target to sell their products and services. For example: despite the similarities between Coca-Cola and Pepsi Cola, Coca-Cola targets a broad consumer market, whereas Pepsi segments its market on the basis of age, targets the younger segment, and positions itself compared to Coca-Cola with its products and communication as the “younger” brand (Tedlow 1996).

### **Responsibility strategies**

Firms that follow responsibility strategies differentiate themselves from competitors on the basis of one or more sustainability issues only. As such, their basic aim is to show that business in a certain industry should not necessarily be at the expense of certain ecological and/or socio-cultural issues. Hence, environmental or social interest groups generally have an important stake in these firms, or even founded them (see Roozen and Van der Hoff 2001, for a description of the foundation and development of Fair Trade operations).

In a responsible store strategy, stores aim to attract consumers because they sell sustainable products. Nature shops that exclusively sell organic products, and the Body Shop selling environment-friendly cosmetics that are not tested on animals, are to this respect prominent examples. In a responsible category strategy, it is often not a firm but a group of firms, stakeholders, and/or the government that promotes a specific category that contributes more toward sustainable development than the categories by which it can be substituted. Examples include campaigns that aim to convince people to save energy, become vegetarians, or to use a bike rather than a car. In a responsible brand strategy, a brand is developed to communicate sustainable attributes of the products that are sold under the heading of that brand. For exam-

ple: “the green cow” is a brand of organic dairy products. If we see a brand as a distinguished name and/or symbol (such as a logo, a trade mark, or package design) that is meant to identify products or goods from a seller or group of sellers in order to differentiate these products from competitors (Aaker 1991), then also labels such as Eko (organic) and Fair Trade can be seen as responsible brand strategies because consumers often have associations with these labels of products without knowing precisely the circumstances under which they are produced. Finally, in a responsible product strategy, firms try to pursue consumers to choose the more sustainable product from their product line, such as a hybrid car (that uses electricity in addition to fuel) from a brand that also offers cars with regular fuel engines.

### **Value strategies**

In a value strategy firms create multiple benefits to consumers. Value is defined as: ‘the sum total of all benefits that customers perceive to receive if they accept the market offering’ (Hunt’s 2000, p. 32). If firms include sustainability attributes among the benefits that they create for customers, a value strategy is a marketing strategy for sustainability. In a valuable store strategy a firm sets out to create benefits to consumers, such as locations that are easy to reach for consumers, assortment variety, service, private labels, product quality, etc. (e.g. Hoch et al. 1999; Levy and Weitz 1998; Steenkamp and Wedel 1991). In the Netherlands, Albert Heijn is the best known example of a retailer that sets out to create superior value to consumers. Albert Heijn also includes several sustainability attributes in this strategy (Remmers 2004). In a valuable category strategy, a specific category of products is perceived as more valuable by consumers than categories that may substitute it. Many consumers have, for example, a higher overall quality perception of veal than of other types of meat. Recently, the Dutch veal producers have jointly started a project to increase animal welfare in their sector. Similarly, in a valuable brand strategy a firm sets out to build brand equity: positive consumer associations that relate to a specific brand (Aaker 1991). A brand like Iglo is supported by a sustainable agriculture initiative through its mother company Unilever, and participates in sustainable fishing initiatives such as Marine Stewardship Council (Ingenbleek and Meulenber 2005). In a valuable product strategy, a firm includes a product in its product line that offers several more valuable features than alternatives. A French supermarket offers for example veal with a different taste, color and higher degree of animal welfare within its store brand (Schuttelaar & Partners 2003).

### **Resources for responsibility and value strategies**

The resource-based view of the firm suggests that strategy and performance are consequences of a firm’s tangible and intangible resources (e.g. Dierickx and Cool 1989; Penrose 1959; Wernerfelt 1984). Resources may include for instance machinery, distribution channels, R&D capabilities, and specific skills. The resource-based view suggests that resources are imperfectly

mobile and heterogeneous, meaning that each firm has a unique stock of resources that can't always be bought or sold in the market (Hunt and Lambe 2000). A typical example of an imperfectly mobile resource is a competence: "an ability to sustain the coordinated deployment of assets in a way that help the firm achieve its goals" (Sanchez, Heene, and Thomas 1996, p. 8). Day (1994, p. 38) emphasizes the complex nature of competencies as "complex bundles of skills and collective learning, exercised through organizational processes, that ensure superior coordination of functional activities." The competence-based view emphasizes that firms have a core competence that is rooted in the culture of an organization and therefore difficult to imitate by competitors. A core competence enables an organization to create value in different market offerings and product lines and thus provides access to a variety of markets (Hamel and Prahalad 1994).

The core competence of firms that pursue responsibility strategies will reflect their mission to improve one or more sustainability issues. The fundamental difference in resources between them and their competitors is their strong stakeholder orientation (Maignan and Ferrell 2004), resulting in, among other things, knowledge on how to produce by more sustainable methods (such as specific knowledge on protection of ecosystems or poverty reduction). In addition, knowing that firms that pursue responsibility strategies are basically doing the same thing as their competitors, only in a more sustainable manner, they need similar resources as their competitors (Dess and Davis 1984). Hence, they will also have a strong competitor orientation (Day and Wensley 1988).

Because of their strong orientations to stakeholders and competitors (which are deeply rooted in the organizational cultures), firms that pursue a responsibility strategy are likely to penetrate markets in which (1) certain sustainability issues are considered most problematic, and (2) in which competitors' offerings can be copied relatively easy. With respect to the latter: firms are likely to focus on those products or categories that require relatively few resources and that need a long time to be developed, such as specific technological competencies in food processing. For example: organic products were initially merely fresh products that predominantly required agricultural knowledge and a distribution channel. Only recently, an increasing number of processed foods are found on the shelves, often developed in collaboration with manufacturers that have the specific knowledge to develop and produce these products.

The aim to create superior customer value is reflected in the core competence of firms that pursue a value strategy, in particular by a strong market orientation (Day 1994; Hunt and Morgan 1995; Slater 1997). A market orientation consists of orientations towards customers and competitors (Hunt and Morgan 1995) that are rooted in the culture of an organization (Homburg and Pflesser 2000). By generating, distributing, and using market information (Kohli and Jaworski 1990), it injects business processes with a superior understanding of the market (Day 1994), resulting in the creation of superior customer value (Hunt and Morgan 1995). A market

orientation doesn't only provide firms with a superior understanding of the customers' wants and needs and the alternatives that he or she considers, but is also stimulates the search for technological solutions to satisfy those wants and needs (Han, Kim, and Kim 2001).

### ***The effectiveness of responsibility and value strategies***

Because firms that pursue a responsibility strategy take more care of certain natural or socio-cultural resources than their competitors, they are less efficient. In other words: firms that exploit resources can produce in principle at lower costs than firms that take care of those resources. To cover these costs, products will be priced at a higher level. Hence, firms that pursue responsibility strategies will be dependent on the existence of a market segment of consumers who are willing to pay a premium for the specific sustainability attributes (Ingenbleek and Meulenbergh 2005).

Firms that pursue a value strategy, typically develop products that offer superior value to customers, so called product advantage (Atuahene-Gima 1996; Gatignon and Xuereb 1997). A meta-analysis on new product performance suggests that relative product advantage is the major driver of new product performance (Henard and Szymanski 2001). Creating customer value is likely to yield higher customer satisfaction and loyalty, to attract new customers and to increase sales to current customers (Woodruff 1997). Hence, the creation of customer value on the basis of a market orientation leads to superior performance for firms (Kirca, Jayachandran, and Bearden 2005; Rodriguez Cano, Carrilat, and Jaramillo 2004).

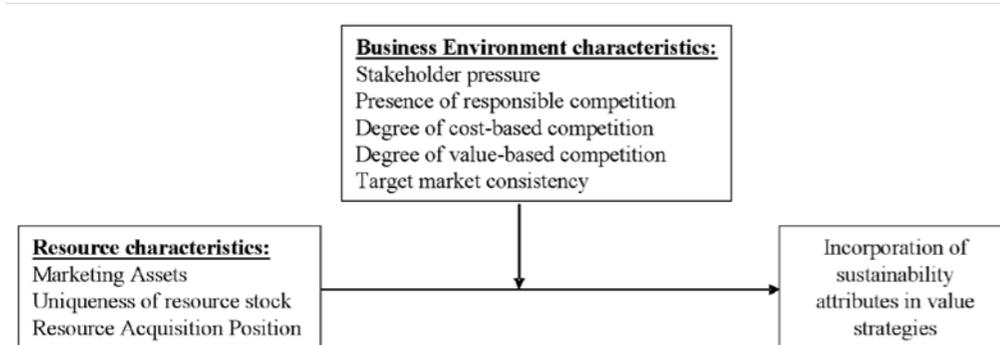
For the sake of sustainable development, it is therefore important that the efforts of private businesses are not limited to responsibility strategies. To grow beyond the market segment of responsible consumers, it is key to pursue value strategies. In order to make these strategies "sustainable" it is important to understand why and under which conditions firms that follow a value strategy are more likely to increase the sustainability component of their strategy.

### ***How do value strategies become sustainable?***

Firms that pursue a value strategy don't necessarily include sustainability attributes in their strategies. Certain factors may enhance their efforts to do so (see Figure 1). Following the resource-based view of the firm, firms try to improve their resource stock in order to strengthen their market position and financial performance. Once the competitive position becomes less advantageous due to competitive pressures, the firm should again strengthen resource stock to develop innovations that strengthen its market position (Hunt 2000). Following the rationales of this theory, specific characteristics of the firm's resource stock may strengthen the extent to which the firm uses its resources in value creation that includes sustainability attributes in

market offerings. Moreover, this process of resource use to improve sustainability along value may be increased or decreased under certain conditions of the business environment in which the competitive process takes place.

Figure 1: Conceptual framework of value creation including sustainability attributes



### Resource characteristics

**Marketing assets.** Sustainability attributes affect consumer perceptions (see Table 1). Some consumers may see these attributes as beneficial, but, more importantly: if firms that follow a value strategy appear to fall short on sustainability issues, it will harm the overall value perception (Sen and Bhattacharya 2001). Ingenbleek and Meulenber (2005) see this as an important reason of why large firms in agribusiness are increasingly involved in codes of conduct for sustainable agriculture. A prominent example is Utz Kapeh that certifies coffee on sustainability issues such as environment and poverty reduction. It involves several major coffee brands among others DE (Sarah Lee) and private coffee labels of Albert Heijn and C1000. Engaging in this kind of programs enables firms to protect their –perhaps most valuable– resources such as their brand and (store or category) image, and customer relationships (marketing assets). Hence, firms that have strong marketing assets are more likely to include sustainability attributes in a value strategy.

**Uniqueness of resource stock.** Firms that have a unique resource stock will be more likely to include sustainability attributes in a value strategy. Because of their unique resources, their market offerings are difficult to copy by competitors. The value they offer is for example based on patented technologies, unique relationships with suppliers (Burt 1992), or a long history of development that raised entry barriers (Porter 1980). Because of the uniqueness of the re-

sources that underlie the market positions of these firms, their position of competitive advantage is sustainable in the sense that it will be profitable in the long run. In order to maintain this lucrative market position, firms should sustain resources for future generations (cf. the resource-dependent motivations for CSR discussed before). For example: an important motivation for Unilever to participate in the Marine Stewardship Council is that it still aims to produce its Iglo fish fingers for generations to come (Unilever 2003).

**Resource acquisition position.** In the dynamic process of competition firms need to continuously strengthen their resource stock (developing competencies, acquiring new facilities, materials, etc.). Firms that have a positive image in sustainability matters –or at least not a negative image– may have a broader access to suppliers and resources. Organizational studies indicate that organizations facing legitimacy challenges often lose their unrestricted access to markets. This limits their strategic options and perhaps causes them to become non-players in certain markets (Deepphouse and Carter 2004). The evidence is particularly clear when it comes to firms' positions in the labour market (see Table 1). Firms that depend on specific types of labour (such as highly trained technical skills) or any other resource inputs that may be harmed when a firm is seen as less legitimate, are therefore more likely to include sustainability attributes in value strategies.

### Business environment characteristics

Several factors from the business environment of firms may increase the chance that firms indeed use their resources to include sustainability attributes in their value strategies, or the degree to which they do.

**Stakeholder pressure.** It is clarified by literature on stakeholder orientation: firms are not just responsible to society in general but to stakeholders (Clarkson 1995; Maignan and Ferrell 2004). The degree of pressure of these stakeholders (and direction of this pressure) may influence the firm's actions in resource deployment for sustainability attributes in value creation. Pressure from action groups resulted for example in McDonald's and Burger King to impose criteria regarding animal welfare on its meat suppliers. Similarly, it moved Nike to abandon child labour from its production facilities in developing countries.

**Presence of responsible competition.** Action groups on sustainability aspects such as child labour, poverty, ecosystems, and environment may be, however, at arm's length from the firm. Following Henriques and Sadosky's (1999) conceptualization of stakeholders, they are community stakeholders, rather than organizational stakeholders (the latter have a much more direct stake in the organization). By establishing or funding firms that pursue responsibility strategies, these groups may strengthen their influence on business and thus achieve goals that

are otherwise hard to achieve, because the organization is too distinct from the (to their eyes) “harmful” businesses. The presence of “responsible” competitors may stimulate firms that follow low value strategies to include sustainability attributes in their processes of value creation. The aforementioned example of Utz Kapeh in which several major coffee brands participate, may have been stimulated by the fact that these brands were competing for some time with Fair Trade coffee.

Degrees of cost-based and value-based competition. In addition to responsible competition, firms will also face actions by other competitors. The way these firms compete may influence the extent to which firms that follow value strategies pay attention to sustainability issues. In the process of competition, firms improve their resource stock to strengthen market positions by using their resources in more effective and/or efficient ways than competitors (Hunt 2000). Competition that focuses predominantly on effectiveness –the creation of customer value–, will favor the creation of sustainability attributes. Firstly, because the creation of customer value is the critical success factor in these markets, competitors will take more precautions to protect the value they created. Hence, they will also take precautions to avoid the critique of competing in unsustainable ways. Secondly, sustainability may be another way to differentiate from competitors, especially if other means of differentiation become exhausted. On the Swiss food retailing market, for example, market leader Migros is challenged by market follower Coop. Both supermarkets compete essentially on value. To distinguish themselves they have developed and now promote “ethical” store brands that impose high sustainability standards on suppliers regarding many issues (Ingenbleek et al. 2004). If competition, however, focuses predominantly on efficiency –lower costs that enable lower prices–, competitors lack these reasons and are more likely to economize on sustainability issues in order to compete more efficiently. Hence, sustainable development will be enhanced by fierce value-based competition, but will be decreased by intense price competition that requires low costs.

Target market consistency. Finally, if firms target specific market segments that appreciate specific sustainability issues (Sen and Bhattacharya 2001), then adding sustainability attributes to valuable offerings will increase the overall value perception of consumers. Sustainable development is therefore more likely to be successful in markets with consumers that are highly involved in sustainability issues.

### ***How can value strategies be generated?***

Knowing that value strategies provide an important opportunity to increase sustainability, the question remains how value strategies can be generated? In other words: how can firms or business systems that have no strong tradition in creating customer value strategically switch to value creation? This question received increased attention over the last years for sound rea-

sons. Since the mid-1980s strategic management has been complemented by managers’ interests for operational aspects of business. Total quality management, supply chain management, and just-in-time production have gained interest. New buzzwords included Business Process Reengineering and the Lean and Mean Corporation. Within some companies, operational excellence has even become the focal point and has almost substituted strategy. Operational effectiveness is however not the same as strategy (Porter 1996). Although operational effectiveness is an important aspect of a firm’s business model, it doesn’t generate new value and it can be imitated by competitors. It therefore doesn’t yield a sustainable position of competitive advantage. Replacing strategy development by operational effectiveness is therefore a dangerous practice. How firms can revive their strategy and create new value to customers is a topic that increasingly gains attention in marketing literature. Although this literature is still dispersed over different topics, the term strategic innovation becomes increasingly popular to indicate the relationships between these topics (Gary 1998; Kim and Renee 2004; Markides 1997; 1998; Vijay and Chris 2004).

In the following we will first explain what strategic innovation is. Next, we will discuss which resources firms may need to engage in strategic innovation in order to generate new value strategies.

### ***Strategic innovation***

To get a grasp of what is meant by strategic innovation, it is useful to present some definitions. Markides (1997) defines strategic innovation as ‘breaking the rules of the game in its industry to find new sources of innovation.’ Kim and Mauborgne (1997) define value innovation as a concept that ‘makes the competition irrelevant by offering fundamentally new and superior buyer value in existing markets and by enabling a quantum leap in buyer value to create new markets’. Schlegelmilch et al. (2005) define it in their overview as ‘the fundamental reconceptualization of the business model and the reshaping of existing markets (by breaking the rules and changing the nature of competition) to achieve dramatic value improvements for customers and high growth for companies.’

A number of features of strategic innovation can be distilled from these articles: (1) strategic innovation is about the reinvention of a firm’s business model; (2) it is a disruptive market force; (3) the foundation for strategic innovation is build on the delivery of superior customer value; and (4) strategic innovation is about an innovative strategy not an innovation strategy. Strategic innovation goes beyond product innovation. It creates value by competing on different dimensions of the business model resulting in a new set of market boundaries. It thus goes beyond the traditional concepts of competitive strategy (Porter 1980) and growth strategy (Ansoff 1985).

A business model can be defined in terms of what value is offered, to whom it is offered, and how it is offered (Abell 1980). According to many authors, these three fundamental questions underpin the business model of a firm (Markides 1998; Schlegelmilch, Diamantopoulos, and Kreuz 2005; Vijay and Anil 2001). In short, strategic innovation is about redefining a firm's business model by changing the "who", "what" and/or "how".

First, with respect to the "what" dimension of the business model, firms will generally need a deep understanding of the wants and needs of customers in order to understand what customers perceive as valuable. One way to achieve this is by defining market offerings in terms of attributes, and examining how customers evaluate the performance of these attributes (Woodruff 1997). After all, value is the sum total of all benefits that customer perceive to receive with a product or service (Hunt 2000). By increasing the understanding of how valuable different attributes actually are, a firm may become inspired to improve these attributes, thereby creating new customer value (Woodruff 1997). New technologies may also provide a basis for value creation, the so-called "technology push". Technology defines the attributes that customers subsequently may perceive as valuable (Adner 2002; Gatignon and Xuereb 1997). New technologies may therefore result in new value, under the condition that the firm understands the value potential of the technology.

Second, with respect to the "who" dimension of the business model: value is created for a certain market or market segment (Hunt and Morgan 1995). Strategic innovation therefore not only involves changes in what is created, but also who considers it valuable what the company creates. Strategic innovation can thus occur by defining new segments of customers currently not served by competitors. Looking to the market from different directions it may result in the discovery of "a hole in the market" (Kim and Mauborgne 1997).

Third, the "how" dimension of the business model, refers to the way value is delivered to customers. Value is created by "the commingling of the firm with entities in its external environment" (Srivastava, Shervani, and Fahey 1998). Cartwright and Oliver (2000) refer to such a network as a value web. According to Cartwright and Oliver (2000) the true value creation takes place when several organizations share common technologies or intellectual capital. Strategic innovation therefore can also take place beyond the boundaries of the firm. By creating new kinds of value webs customer value can be redefined or delivered in an alternative way. Literature has recently begun to explore the creation of value in different network structures and relationships (Anderson, Hakansson, and Johanson 1994; Frels, Shervani, and Srivastava 2003; John, Weiss, and Dutta 1999; Wathne and Heide 2004).

### ***Resources for strategic innovation***

No matter whether a firm strategically innovates on the "what", "who" or "how" dimension, in all cases a new insight provides the basis for the changes in the resource stock (how), that lead to value (what) for a certain group of customers (who). With respect to value creation, marketing literature has for example paid attention to learning orientation (Sinkula, Baker, and Noordewier 1997; Slater and Narver 1995) and proactive market orientation (Narver, Slater and Maclaughlin 2004). The ability to sense and respond to new technologies is identified by Srinivasan, Lilien, and Rangaswamy (2002) as technological opportunism. Willingness to cannibalize is a firm characteristic that refers to the willingness to invest in these new technologies at the expense of currently profitable technologies (Chandy and Tellis 1998). An emerging customer segment orientation (the gathering and dissemination of information on potential customers), besides a mainstream orientation, helps firms with the identification of potential customers and thus potential for value delivery (Govindarajan and Kopalle 2005). Vise versa, a close relationship with current customers can lead to institutionalized thinking (Hamel and Prahalad 1994) and a myopic view of the marketplace (Christensen and Bower 1996).

These orientations are necessary to remain flexible in a dynamic environment, and to keep an open eye to opportunities and threats (Danneels 2003). In other words: the ability of continuously changing and reinventing the business model is a resource in itself. Teece, Pisano, and Shuen (1997) refer to this respect to dynamic capabilities, which they define as "the firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments." When organizing for strategic innovation a firm can also choose to maintain the current business model while implementing the new business model. This requires an ambidextrous organization that can manage both business models simultaneously (Abell 1999; O'Reilly and Tushman 2004).

Firms must redefine the foundations of their business models, this involves the ability and will to deviate from established ways. Strategic firms must be able to conjure a different world, to see things with different eyes (Denrell and March 2001). This talent for deviance is what sets strategic innovators apart from their competitors and leads firms to places where the competition cannot follow. Firms that manage to change their market positions based on operational excellence and efficiency into positions based on superior customer value, change the course of action in the competitive process and provide a stronger basis for sustainable development.

## Conclusions and implications

This paper analyzed the literature in marketing and strategy on CSR, and developed a conceptualization of marketing strategies for sustainability, including the dynamics of the competitive process that may stimulate the development of sustainability attributes in value strategies. The discussion of the relevant literature and the conceptualization that is based on it, suggest that market forces and sustainable development do not necessarily contradict. Responsible marketing strategies have to this respect a mirror function in the market: They show that responsible market offerings –either on the store, category, brand, or product level– can acquire a permanent foothold in the market. To grow beyond the segment of highly involved consumers, however, a value strategy promises more potential. Firms that set out to create superior customer value are most likely to generate superior profits and to use resources to improve relevant sustainability issues in the People and Planet domains on a larger scale. This is especially the case if the competitive advantage of the firm depends on marketing assets (like brand names or relationships with customers), unique resources (that are difficult to imitate by competitors), and if resource inputs are critical to competitive advantage of firms (such as a strong position on the labor market). This process of improving sustainability issues is enhanced by stakeholder pressure, responsible competitors, and value- rather than efficiency-based competition. To this respect, the process of “naming and shaming” is likely to stimulate sustainable development through market forces: positioning offerings that consumers perceive as sustainable, strengthening brand, category, and store images with sustainability attributes, and weakening those images that are considered undesirable for sustainable development. Given the central role of value-based competition in this process, strategic innovation was discussed as a central process of strategic change towards value-based competition. Strategic innovation may bring agribusinesses to a position of sustainable development that also promotes sustainability in the People and Planet domains.

## Future research

We suggest two major directions for future research: strategic innovation and sustaining competitive advantage.

**Strategic innovation.** After the Second World War, the major goal of agriculture was to feed the rapidly growing population (except for the horticultural sectors). Agriculture therefore held a special position in the economy and was protected and stimulated by national and European policies. The resulting system was marked by efficient large scale production processes, with little product differentiation and an increasing burden for the environment and ecosystems. While the walls of protection are gradually torn down, the sector faces an increasingly competitive international playing field on which it should gain positions of competitive advantage in order to survive. Moreover, in order to deal with growing concerns of citizens and stakeholders regarding environmental and social aspects such as animal welfare and farmer incomes, agricultural systems should develop marketing strategies for sustainability in order to be both profitable and sustainable.

A first direction for future research is therefore focused on strategic innovation: how agricultural systems can innovate in order to achieve positions of competitive advantage based on resources that create superior customer value. The mechanisms of strategic innovation should be studied in other industries as they are unlikely to be found in agribusiness itself. In other words: agribusiness may learn from the successful strategic innovations of other businesses. The pattern of successful strategic innovation that emerges from such an analysis can subsequently be applied to agribusiness. To this respect, research should also examine the feasibility of processes of strategic innovation for agribusiness. It may identify the necessary conditions that should be met before strategic innovation may take off.

**Sustaining competitive advantage.** Whereas strategic innovation enables firms to capture a position of competitive advantage, the subsequent issue is to make competitive advantage sustainable: making sure that it will not erode in the competitive market that is influenced by stakeholders, consumers, public policy and the like. Literature provides several theoretical arguments for the protection of positions of competitive advantage including entry barriers (Porter 1980), network structures (Burt 1992), competencies that can't be copied by competitors (Hamel and Prahalad 1994) and property rights (Grosman and Hart 1986; Hart and Moore 1990). Whereas research has predominantly focused on competitive forces, also stakeholder pressures, responsible competition, consumer price sensitivity and other forces may harm competitive positions.

Research should identify these forces and determine when and under which conditions they may harm competitive advantage and determine how they interact. Such a research effort would have important implications for sustainability, because it would also indicate how positions of competitive advantage of firms that compete in unsustainable ways can be eroded effectively. It should therefore also test the relationships between sustainability and value- and efficiency-based competition (see for example Figure 1). These research efforts may both focus on the business and consumer level as unit of analysis. Research on the business level may focus on inspiring sectors or industries within agribusiness (such as the horticultural sector) or beyond agribusiness. Research on the consumer level may focus on how consumers develop perceptions and associations with mainstream products and brands when they are continuously confronted with responsible alternatives to mainstream products. Such a research effort would make clear the actual effects of responsible marketing strategies, such as organic and Fair Trade.

Another important direction for future research is the development of value pricing competencies that enable firms to turn competitive advantage effectively into profitability. This direction for future research will be discussed in the position paper by Ingenbleek, Backus, and Verhallen (2005).

### ***Implications***

Our research has several implications for public policy, stakeholders (in particular non-governmental organizations) and agribusiness regarding the actions that they may take to contribute to sustainable agriculture before the process of strategic innovation takes off. The implications can be grouped under three headings: (1) the direction in which the process of competition is developing, (2) the “shaming” process, and (3) the “naming” process.

#### *The direction of the competitive process*

It is agribusiness (including retailers and processing firms) that determines the direction of the process of competition. Market positions can be strengthened by improving efficiency and the value that is offered to customers. Firms and sectors that are stuck in a process of efficient competition, and that realize that in the long-run competitors will become more efficient, may develop scenarios on how they can change the “rules” of competition in their market and change the process towards value creation by changing their business model.

Public policy may guide the process of competition in directions that are desirable for sustainable development. Because price competition is not desirable for sustainable development, regulating measures that avoid excesses in price competition may be effective to guide the competitive process in the direction of value-based competition.

#### *The “shaming” process*

The “shaming” process –supporting stakeholders in their efforts to create negative associations with brands and store names that compete in an unsustainable manner– is in principle the task of stakeholders that may make consumers aware of unsustainable practices of businesses. Stakeholders should therefore not only search for a dialogue with agribusiness, but continuously move between the two options of collaboration and shaming, in which the latter option may sometimes be more effective to increase sustainable development than the first. Public policy may stimulate these efforts. Stakeholders may be supported both directly (for example by subsidizing these organizations), and indirectly, by supporting specific responsibility strategies (the way public policy supports for example organic agriculture).

If public policy decides to support responsibility strategies, market share doesn’t seem to be the appropriate metric for evaluation. Responsibility strategies are successful (1) if they achieve a stable foothold in the market, thus increasing the awareness of consumers, and (2) if they generate responses from mainstream competitors. This implies that marketing activities of responsibility strategies should target the awareness stage of the adoption process of consumers, rather than the actual purchase decision. It also implies that growth of responsibility strategies should focus on an increase of the number of product categories, rather than an increase of market share within a category.

#### *The “naming” process*

The “naming” process is the task of agribusiness, in particular those firms that direct themselves towards consumers (predominantly retailers and brand manufacturers). The process therefore doesn’t start with explicated wants and needs of consumers, but with those market actors that are in direct contact with the consumer and can create positive associations of sustainability to brand names and store or category images.

Public policy may support business initiatives that aim to create sustainability attributes in their value strategies. Public policy should safeguard the “naming” process by ensuring that creating sustainability attributes is rewarding, in the sense that window-dressing is avoided (creating consumer associations of sustainability without taking actual sustainability measures). To this respect, public policy should protect labels and brands. It may also support these initiatives financially, for example by cross-compliance and other arrangements that reduce the costs of primary producers to switch to sustainable methods of agriculture.

In short, sustainable development can be improved through market forces, but it will follow the rules and the pace of the market. In the end, agribusiness decides how it competes and by which pace it innovates in a direction that will support or will not support sustainable development. Stakeholders can directly influence the process by targeting brands, stores and categories that it considers unsustainable; public policy can support and safeguard those initiatives that it considers desirable and it may help the competitive process in the right direction for sustainable development.

## References

- Aaker, D.A. (1991), *Managing brand equity : capitalizing on the value of a brand name*. New York [etc.]: Free Press.
- Abell, D. F. (1999), "Competing today while preparing for tomorrow," *Sloan Management Review*, 40(3), 73-+.
- Adner, R. (2002), "When are technologies disruptive? A demand-based view of the emergence of competition," *Strategic Management Journal*, 23(8), 667-88.
- Agle, Bradley R., Ronald K. Mitchell, and Jeffrey A. Sonnenfeld (1999), "Who Matters to CEOs? An Investigation of Stakeholder Attributes and Saliency, Corporate Performance, and CEO Values." *Academy of Management Journal* 42 (5), 507-25.
- Anderson, James C. and James A. Narus (1999), *Business Market Management: Understanding, Creating, and Delivering Value*. Upper Saddle River, NJ: Prentice Hall.
- Anderson, James C., Hskan Hskansson, and Jan Johanson (1994), "Dyadic business relationships within a business network context," *American Marketing Association*, 1.
- Aupperle, Kenneth E., Archie B. Carroll, and John D. Hatfield (1985), "An Empirical Examination of the Relationship between Corporate Social Responsibility and Profitability," *Academy of Management Journal*, 28(3), 446-63.
- Atuahene-Gima, Kwaku (1996), "Market Orientation and Innovation," *Journal of Business Research*, 35, 93-103.
- Bhattacharya, C.B. and Sankar Sen (2004b), "Doing Better at Doing Good: When, Why, and How Consumers Respond to Corporate Social Initiatives," *California Management Review*, 47 (Fall), 9-24.
- Bowen, H.R. (1953). *Social Responsibilities of the Businessman*. New York: Harper and Row.
- Brown, Tom J. and Peter A. Dacin (1997), "The Company and the Product: Corporate Associations and Consumer Product Responses," *Journal of Marketing*, 61 (January), 68-84.
- Brundtland, Gro H., Mansour Khalid, and others (1987), *Our Common Future; World Commission on Environment and Development*. Oxford: Oxford University Press.
- Burt, Ronald S. (1992), *Structural Holes, The Social Structure of Competition*. Cambridge: Harvard University Press.
- Carroll, Archie B. (1979), "A Three-Dimensional Conceptual Model of Corporate Performance," *Academy of Management Review*, 4 (4), 497-505.
- Cartwright, Shawn D. and Richard W. Oliver (2000), "Untangling the value web," *Emerald*, 22. CEC (2001). *European governance: A white paper*. Commission of the European Communities, 428.
- Chandy, R. K. and G. J. Tellis (1998), "Organizing for radical product innovation: The overlooked role of willingness to cannibalize," *Journal of Marketing Research*, 35(4), 474-87.
- Christensen, C. M. and J. L. Bower (1996), "Customer power, strategic investment, and the failure of leading firms," *Strategic Management Journal*, 17(3), 197-218.
- Clarkson, B.E. (1995), "A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance," *The Academy of Management Review*, 20(1), 92-117.
- Creyer, Elizabeth H. and William T. Ross Jr. (1997), "The influence of Firm Behavior on Purchase Intentions: Do Consumers Really Care About Business Ethics?," *Journal of Consumer Marketing*, 14 (6), 421-32.
- Danneels, E. (2003), "Tight-loose coupling with customers: The enactment of customer orientation," *Strategic Management Journal*, 24(6), 559-76.
- Day, George S. (1994), "The Capabilities of Market-Driven Organizations," *Journal of Marketing*, 58 (October), 37-52.
- Day, George S. and Robin Wensley (1988), "Assessing Advantage: A Framework for Diagnosing Competitive Superiority," *Journal of Marketing*, 52 (April), 1-20.
- Deephouse, David L. and Suzanne M. Carter (2005), "An Examination of Differences between Organizational Legitimacy and Organizational Reputation," *Journal of Management Studies*, 42(2), p. 329
- Denrell, J. and J. G. March (2001), "Adaptation as information restriction: The hot stove effect," *Organization Science*, 12(5), 523-38.
- Dess, G.G. and P.S. Davis (1984), "Porter's Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance," *Academy of Management Review*, 27, 467-488.
- Dierckx, Ingemar and Karel Cool (1989), "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35 (December), 1504-11.
- DiMaggio, P.J. and W.W. Powell (1983), "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Field," *American Sociological Review*, 48, 147-60.
- Donaldson, Thomas and Lee E. Preston (1995), "The Stakeholder Theory of the Corporation: Concepts, Evidence and Implications," *Academy of Management Review*, 29 (January), 65-91.
- Economist (2003), "The Unrepentant Oilman.," *The Economist* (March 15).
- Frambach, Ruud T. and Ed J. Nijssen (1999, in Dutch). *Marketingstrategie: het schrijven van een strategisch marketingplan*. Houten: Educatieve partners Nederland.
- Frels, J. K., T. Shervani, and R. K. Srivastava (2003), "The integrated networks model: Explaining resource allocations in network markets," *Journal of Marketing*, 67(1), 29-45.
- Frooman, Jeff (1997), "Socially Irresponsible and Illegal Behavior and Shareholder Wealth: A Meta-Analysis of Event Studies," *Business and Society* 36(3), 221-49.
- Frooman, Jeff (1999), "Stakeholder Influence Strategies," *Academy of Management Review*, 24 (2), 191-205.
- Gatignon, Hubert and Jean-Marc Xuereb (1997), "Strategic Orientation of the Firm and New Product Performance," *Journal of Marketing Research*, 34 (February), 77-90.

Grosman, S.J. and O. Hart (1986), "The Costs and Benefits of Ownership, A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, 94, 691-719.

Hamel, Gary and C.K. Prahalad (1994), *Competing for the Future*. Boston: Harvard Business School Press.

Gary, Hamel (1998), "Strategy Innovation and the Quest for Value," *Sloan Management Review*, 39(2), 7.

Govindarajan, Vijay and Praveen K. Kopalle (2005), "Can Incumbents Introduce Radical and Disruptive Innovations?," 1-21.

Han, Jin K., Namwoon Kim, and Hong-Bumm Kim (2001), "Entry Barriers: A Dull-, One-, or Two-Edged Sword for Incumbents? Unraveling the Paradox From a Contingency Perspective," *Journal of Marketing*, 65 (January), 1-14.

Handelman, Jay M. and Stephen J. Arnold (1999), "The Role of Marketing Actions with a Social Dimension: Appeals to the Institutional Environment," *Journal of Marketing*, 63 (July), 33-48.

Hart, O and J. Moore (1990), "Property Rights and the Nature of the Firm," *Journal of Political Economy*, 98, 1119-58.

Henard, David H. and David M. Szymanski (2001), "Why Some New Products Are More Successful Than Others," *Journal of Marketing Research*, 38 (August), 362-75.

Henriques, Irene and Perry Sadowsky (1999), "The Relationship between Environmental Commitment and Managerial Perceptions of Stakeholder Importance," *Academy of Management Journal*, 20 (2), 404-37.

Hillman, Amy J. and Gerald D. Keim, "Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line?" *Strategic Management Journal*, 22, 125-39.

Hoch, S.J., E.T. Bradlow, and B. Wansink (1999), "The Variety of an Assortment," *Marketing Science*, 18 (4), 527-46.

Homburg, Christian and Christian Pflesser (2000), "A Multiple-Layer Model of Market-Oriented Organizational Culture: Measurement Issues and Performance Outcomes," *Journal of Marketing Research*, 37 (November), 449-62.

Hunt, Shelby D. (2000), *A General Theory of Competition: Resources, Competences, Productivity, Economic Growth*. Thousand Oaks, CA: Sage.

Penrose, Edith T. (1959), *The Theory of the Growth of the Firm*. London: Basil Blackwell and Mott.

Hunt, Shelby D. and C. Jay Lambe (2000), "Marketing's Contribution to Business Strategy: Market Orientation, Relationship Marketing and Resource-Advantage Theory," *International Journal of Management Reviews*, 2 (1), 17-43.

Hunt, Shelby D. and Robert M. Morgan (1995), "The Comparative Advantage Theory of Competition," *Journal of Marketing*, 59 (April), 1-15.

Ingenbleek, Paul and Mathew T.G. Meulenber (2005), "The Battle Between Good and Better, A Strategic Marketing Perspective on Codes of Conduct for Sustainable Agriculture," Working Paper Wageningen University.

Ingenbleek, Paul, Ge Backus, and Theo. M.M. Verhallen (2005), "Value Pricing Capabilities in Agribusiness," *TransForum Position Paper*.

John, G., A. M. Weiss, and S. Dutta (1999), "Marketing in technology-intensive markets: Toward a conceptual framework," *Journal of Marketing*, 63 78-91.

Kim, W. C. and Renee Mauborgne (1997), "Value innovation: The strategic logic of high growth," *Harvard Business Review*, 75(1), 102.

Kirca, A. H., S. Jayachandran, and W. O. Bearden (2005), "Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance," *Journal of Marketing*, 69(2), 24-41.

Klein, Jill and Niray Dawar (2004), "Corporate Social Responsibility and Consumers' Attributions and Brand Evaluations in a Product-harm Crisis," *International Journal of Research in Marketing*, 21, 203-217.

Kohli, Ajay K. and Bernard J. Jaworski (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications," *Journal of Marketing* 54 (April), 1-18.

Leeflang, Peter S.H., Dick R. Wittink, Michel Wedel, and Philippe A. Naert (2000). *Building Models for Marketing Decisions*. Boston/Dordrecht/London: Kluwer.

Levy, M. and B.A. Weitz (1998), "Retailing management," in *McGraw-Hill series in marketing*. 3rd ed. ed. Boston [etc.]: McGraw-Hill.

Maignan, Isabelle and O.C. Ferrell (2004), "Corporate Social Responsibility and Marketing: An Integrative Framework," *Journal of the Academy of Marketing Science*, 32 (1), 3-19.

Maignan, Isabelle, O.C. Ferrell and Thomas M. Hult (1999), "Corporate Citizenship: Cultural Antecedents and Business Benefits," *Journal of the Academy of Marketing Science*, 27 (4), 455-69.

Margolis, Joshua, James P. Walsh and Klaus Weber (2003), "Social Issues and Management: Our Lost Cause Found," *Journal of Management*, (December),

Margolis, Joshua and James P. Walsh (2003), "Misery Loves Companies: Rethinking Social Initiatives by Business," *Administrative Science Quarterly*, 48 (3), 268-305.

Markides, C. (1997), "Strategic innovation," *Sloan Management Review*, 38(3), 9-23.

Markides, C. (1998), "Strategic innovation in established companies," *Sloan Management Review*, 39(3), 31-+.

Meulenber, Thieu (2003), "'Consument en Burger', betekenis voor de markt van landbouwproducten en voedingsmiddelen," *Tijdschrift voor Sociaal Wetenschappelijk Onderzoek van de Landbouw*, 18 (1), 43-54.

Narver, John C. and Stanley F. Slater (1990), "The Effect of Market Orientation on Business Profitability," *Journal of Marketing*, 54 (October), 20-35.

Narver, J. C., S. F. Slater, and D. L. MacLachlan (2004), "Responsive and proactive market orientation and new-product success," *Journal of Product Innovation Management*, 21(5), 334-47.

O'Reilly, C. A. and M. L. Tushman (2004), "The ambidextrous organisation," *Harvard Business Review*, 82(4), 74-+.

Orlitzky, Marc, Frank L. Schmidt and Sara L. Rynes (2003), "Corporate Social and Financial Performance: A Meta-Analysis," *Organization Studies* 24 (3), 403-41.

Pfeffer, J. and G.R. Salancik (1978). *The External Control of Organizations*. New York: Harper & Row.

Porter, Michael E. (1980), *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: The Free Press.

Porter, M. E. (1996), "What is strategy?," *Harvard Business Review*, 74(6), 61-&.

Rehbein, Kathleen, Sandra Waddock, and Samuel B. Graves (2004), "Understanding Shareholder Activism: Which Corporations are Targeted?" *Business & Society*, 43 (3), 239-67.

Remmers, Jeroom (2004). *People, Planet, Profit in de supermarkt*. Utrecht: Stichting Natuur en Milieu.

Rodriguez Cano, C., Carrilat, F.A., & Jeramillo, F. (2004). A Meta-analysis of the relationship between market orientation and business performance: Evidence from five continents. *International Journal of Research in Marketing*, 21 (2), 179-200.

Roozen, Nico and Frans van der Hoff (2001), *Fair Trade, Het verhaal achter Max Havelaar-koffie, Oké-bananen en Kuyichi-jeans*. Amsterdam: Van Gennep.

Russo, Michael V. and Paul Fouts (1997), "A Resource-based Perspective on Corporate Environmental Performance and Profitability," *Academy of Management Journal*, 40 (3), 534-59.

Sanchez, Juan I. and Petra Brock (1996), "Outcomes of Perceived Discrimination Among Hispanic Employees: Is Diversity Management a Luxury or Necessity?," *Academy of Management Journal*, 39 (3), 704.

Sanchez, Ron, Aimé Heene, and Howard Thomas (1996), *Dynamics of Competence-Based Competition*. New York: Elsevier Science.

Schlegelmilch, Diamantopoulos, and Kreuz (2005), "Strategic innovation: the construct, its drivers and its strategic outcomes," 117-32.

Schuttelaar & Partners (2003), "Database MVO-activiteiten Europese en Nederlandse supermarkten 2003," *Stichting Natuur en Milieu*: [www.snm.nl](http://www.snm.nl).

Sen, Sankar and C.B. Bhattacharya (2001), "Does Doing Good Always Lead to Doing Better? Consumer Reactions to Corporate Social Responsibility," *Journal of Marketing Research*, 38 (May), 225-43.

Serageldin, I. (1996), *Sustainability and the Wealth of Nations, First Steps in an Ongoing Journey. Development Studies and Monographs Series No. 5*. Washington DC: World Bank.

Serageldin, Ismail, and Andrew Steer (eds.) (1994), *Making Development Sustainable: From Concepts to Action*. Washington, DC: World Bank.

Sinkula, J. M., W. E. Baker, and T. Noordewier (1997), "A framework for market-based organizational learning: Linking values, knowledge, and behavior," *Journal of the Academy of Marketing Science*, 25(4), 305-18.

Slater, S. F. and J. C. Narver (1995), "Market Orientation and the Learning Organization," *Journal of Marketing*, 59(3), 63-74.

Slater, Stanley F. (1997), "Developing a Customer Value-Based Theory of the Firm," *Journal of the Academy of Marketing Science*, 25 (2), 162-67.

Smidts, A., A Pruyn and C.B.M. Van Riel, "The Impact of Employee Communication and Perceived External Prestige on Organizational Identification," *Academy of Management Journal*, 44 (5), 1051-1062.

Smith, N. Craig (2003), "Corporate Social Responsibility: Whether or How?" *California Management Review*, 45 (4), 52-76.

Srinivasan, R., G. L. Lilien, and A. Rangaswamy (2002), "Technological opportunism and radical technology adoption: An application to e-business," *Journal of Marketing*, 66(3), 47-60.

Srinivasan, Raji, Gary L. Lilien, and Arvind Rangaswamy (2004), "First in, First out? The Effects of Network Externalities on Pioneer Survival," *American Marketing Association*, 41-58.

Srivastava, R. K., T. A. Shervani, and L. Fahey (1998), "Market-based assets and shareholder value: A framework for analysis," *Journal of Marketing*, 62(1), 2-18.

Steenkamp, J.-B.E.M. and M. Wedel (1991), "Segmenting Retail Markets on Store Image Using a Consumer-Based Methodology," *Journal of Retailing*, 67 (3), 300-20.

Suchman, Mark C. (1995), "Managing Legitimacy: Strategic and Institutional Approaches," *Academy of Management Review*, 20 (July), 571-610.

Tedlow, Richard S. (1996). *New and Improved, The Story of Mass Marketing in America*. Boston: Harvard Business School Press.

Teece, D. J., G. Pisano, and A. Shuen (1997), "Dynamic capabilities and strategic management," *Strategic Management Journal*, 18(7), 509-33.

Turban, Daniel B. and Daniel W. Greening (1997), "Corporate Social Performance and Organizational Attractiveness to Prospective Employees," *Academy of Management Journal*. . 40 (3), 658-73.

Unilever (2003), *Fishing for the Future II, Unilever's Fish Sustainability Initiative (FSI)*, company brochure.

Verhallen, Theo M.M., Carolien Gaakeer, and Vincent Wiegerinck (2004). *Demand-Driven Chains and Networks*. 's Gravenhage: Reed Business Information.

Vijay, Govindarajan and K. G. Anil (2001), "Strategic innovation: A conceptual road map," *Business Horizons*, 44(4), 3.

Vijay, Govindarajan and Trimble Chris (2004), "Strategic Innovation and the Science of Learning," *Mit Sloan Management Review*, 45(2), 67.

Wathne, Kenneth H. and Jan B. Heide (2004), "Relationship Governance in a Supply Chain Network," *American Marketing Association*, 73-89.

Wernerfelt, Birger (1984), "A Resource-Based View of the Firm," *Strategic Management Journal*, 5, 171-80.

Wood, Donna J. (1991), "Corporate Social Performance Revisited," *Academy of Management Review*, 16 (4), 691-718.

Woodruff, Robert B. (1997), "Customer Value: The Next Source for Competitive Advantage," *Journal of the Academy of Marketing Science*, 25 (2), 139-53.  
World Bank (1992). *Governance and development*. Washington DC: World Bank.

## **Risk Perception and Attitude in Transition towards Sustainability in small and medium size Enterprises**

*Prof. dr. ir. Joost M.E. Pennings (Wageningen University, the Netherlands & University of Illinois at Urbana-Champaign)*  
*drs. ir. Nikolaos E.E. Kalogeras (Wageningen University, the Netherlands & University of Illinois at Urbana-Champaign)*

# 1. Introduction

The adoption of sustainable agricultural production systems and policies has received much attention from researchers and policy makers in recent years (e.g., Douglas, 1984, Francis and Younberg, 1990, Westgren, 1999, Harris, 2000). Research has been conducted on the economic viability of sustainable production systems. However, much of this research has been fragmented with little coordination and integration (Comer, et al, 1999). Most studies have taken the perspective of the researcher or professional conservationist, instead of that of the decision process of decision makers of Small and Medium Size Enterprises (SMEs) (Norries and Batie, 1989). Hence, there is a need to better understand the SME's decision-making processes in order to explain and predict SMEs' decisions, i.e., whether or not to adopt sustainable production practices.

The transition from a conventional production system to a sustainable one (i.e. from conventional production practices to organic production practices) implies that SMEs have to change their production practices and decide on the reallocation of their economic resources rather drastically. The decisions to adopt sustainable production processes are considered strategic. Strategic decisions are concerned with the levels of resources needed to achieve organizational goals and involve long-run relationships between the organization and its environment (Steiner and Miner, 1977). These types of decisions are important in terms of actions taken and resources committed (Eisenhardt and Zbaracki, 1992), and they have far reaching consequences for an organization's structure (Quinn, et al, 1988).

Strategic decisions entail a high degree of risk (Jemison, 1987; Bromiley and Miller, 1990, Collins and Ruefli, 1992). Various empirical studies (e.g., Smidts, 1997, Pennings and Smidts 2000) have hypothesized that risk attitudes, as measured by the curvature of the decision maker's utility function (i.e., Pratt-Arrow coefficient of risk aversion), drive decisions.<sup>3</sup> Hence, one may hypothesize that, knowing the curvature of a decision maker's utility function, one can predict whether an SME is going to switch its production practices to sustainable (i.e. organic) practices or not (or vice versa). However, Rabin (2000) and Rabin and Thaler (2001) argue that a local measure of utility, such as the curvature of a decision maker's utility function, may not be of great interest when trying to understand decision makers' behaviour over a wide outcome range. Furthermore, Pennings and Smiths (2003) have shown that strategic behaviour is more strongly related to the global shape of the utility function than to local measures of risk-aversion (i.e., the local shape of the utility function). The global shape of a decision-maker's utility function seems to reflect the manager's decision structure (i.e., choice of production process),

<sup>3</sup> In the expected utility model, the curvature of the utility function reflects the risk attitude of a decision maker (Keeney and Raiffa, 1976). A concave utility function indicates risk-averse behaviour and a convex utility function indicates risk-seeking behaviour.

whereas the local shape of the utility function seems to drive the tactical decision-making processes (e.g., trading behaviour). Pennings and Smidts (2003) examined two broad classes of shapes: fully concave, fully convex and the S-shape (convex/concave). The S-shaped form of the utility function has been proposed in prospect theory (Kahneman and Tversky, 1979).<sup>4</sup> It is likely that there are more than just two functional forms. Pennings and Garcia (2005) address this issue of functional forms in their call for further research. Their work shows that the global shape of the utility function is a predictor of actual strategic behaviour (in their case, the strategic asset allocation of portfolio managers). They argue that the utility concept can be a powerful concept when the full outcome domain of the utility function is examined. In addition, their empirical analysis provides evidence that the shape of the utility function differs among real decision makers and that this heterogeneity drives the heterogeneity in strategic behaviour. While prediction can be considered important, it does not necessarily explain actual strategic behaviour. A question that needs to be answered in order to explain actual strategic behaviour is: "What drives the global shape of the utility function?" Addressing this question will be helpful for policy makers who guide SMEs in their transition to sustainable production systems.

Our empirical domain will be farmers transforming from conventional to sustainable farm practices (and vice versa). The agricultural domain is an excellent example of SMEs confronted with the question whether or not to make a strategic decision towards sustainable production processes. The agricultural sector in the Netherlands and the EU-15 countries is confronted with questions from society about their farm practices. Large-scale commercial farms in the Netherlands employ production systems that use a lot of scarce resources and produce negative externalities. These resource and environmental issues, in combination with the fact that many of these production systems are not sustainable, has raised concerns on the part of policy makers, agribusiness companies, activist groups, and the farm community. Farmers who wish to switch to sustainable agriculture are concerned about the economic viability of this farm type. Farmers who have made the transition have been confronted with large uncertainties regarding costs and revenues, which have led some farmers to reverse their decision, back from sustainable production practices to conventional practices.

In order to gain insight into the issues mentioned above, we describe what we are presenting in this TransForum position paper and what we propose to do in future TransForum research. First, we define the concepts of risk perception and risk attitude and their role in risk behaviour. Second, we explain the strategic nature of the SME's decision to switch from a conventional production system to a sustainable one using the strategic management literature. Third, we discuss the importance of decision-making under risk in agriculture. Furthermore, we discuss why the local shape of the utility function, often used as a measure for a decision-maker's

<sup>4</sup> In prospect theory, the shape of a decision maker's utility function is assumed to differ between the domain of gains and the domain of losses. The proposed convex/concave utility function predicts risk-seeking behaviour in the domain of losses and risk-averse behaviour in the domain of gains.

risk attitude, may not be related to SME's strategic behaviour. We propose that it is the global shape of the utility function that drives strategic behaviour. Fourth, we discuss techniques that elicit a decision maker's utility function. Finally, we propose research hypotheses and related research questions for a TransForum research program on risk and transition to sustainable production practices of SMEs.

The paper is organized in a straightforward manner. Section 2 discusses the concepts of risk perception and risk attitude, their relationship and their relationship with risk behaviour. Section 3 elaborates on the distinction between operational/tactical versus strategic decisions. Section 4 contains a selected review of research topics that have been studied in decision making under risk in agriculture and discusses the concepts of risk-attitude and utility functions. Section 5 contains presentations of the major approaches towards risk attitude in economics and management, selected elicitation techniques for assessing utility functions, and the functional forms of the utility functions. Section 6 concludes with propositions for research with respect to SMEs' risk behaviour towards the transition from a conventional to a sustainable production system.

## 2. Risk Perception & Risk Attitude: Their Role in (Risk) Behaviour

Risk and uncertainty influence almost all decisions because most decisions are made in a context in which future pay-offs are unknown and uncertain.<sup>5</sup> Particularly SMEs' decisions regarding the transition to sustainable production practices are made in a context in which the pay offs of such a transition are highly uncertain. Managing or reducing such risk involves managing the vulnerability and volatility of cash flows to help create firm (shareholder) value (Srivastava, et al. 1998). In this position paper we are interested in SMEs risk behaviour regarding the transition towards sustainable production practices.

Pennings et al. (2002) showed that by de-coupling risk behaviour into the separate components of risk perception and risk attitude a more robust conceptualization and prediction of decision makers' behaviour can be obtained. Risk may be perceived differently across SMEs, and how SMEs cope with perceived risk will depend on their risk attitude. Before a SME can respond to risk, risk must first be perceived or identified (Trimpop 1994). Stone et al. (1994) models the identification of risks as a cognitive process of identification, storage, and retrieval. While a transition to a sustainable production process might be considered risky by economic standards, the level of risk it presents to a SME depends on its risk perception. A SME that believes that it can predict the pay offs of such transition will perceive that transition as less risky than would a SME that feels that it cannot predict well the expected pay offs of such a transition. Let's define the two main drivers of risk behaviour using the work by Pennings and Wansink (2004). Risk perception reflects the SME's interpretation of the likelihood of exposure to the content of the risk (e.g., uncertain pay offs when switching to a sustainable production process) and is defined as a SME's assessment of the risk inherent in a particular decision situation. On the other hand, risk attitude reflects the SME's general or consistent predisposition toward the risk content (e.g., uncertain pay offs when switching to a sustainable production process). It is important to emphasize that risk attitude and risk perception are two different concepts. Whereas risk attitude deals with the decision-maker's interpretation of the content of the risk, and how much he or she dislikes risk, risk perception deals with the decision-maker's interpretation of the likelihood of being exposed to the content of a particular risk.

The notable work of Arrow (1971) and Pratt (1964) provides insight into the relationships between risk perceptions and risk attitudes, and risk behaviour. In Pratt and Arrow's work, risk behaviour, reflected in the risk premium, is a function of risk aversion and the variance in ad-

<sup>5</sup> In this position paper we do not make Knight's (1921) distinction between risk (randomness with knowable probabilities) and uncertainty (randomness with unknowable probabilities), since within our context (transition to sustainable production practices) it is often unknown whether or not the probabilities are known.

ditional wealth. Pennings and Wansink (2004) showed that the Pratt and Arrow framework implies that the interaction between risk attitude and risk perception (the latter reflected in the variance of additional wealth) drives the risk premium and hence, risk behaviour. That is, the greater the risk perceived the more risk-averse SMEs will avoid the risk. In comparison, less risk-averse SMEs will be less prone to avoid risk. Hence risk perception may strengthen or weaken the relationship between risk attitude and risk behaviour. In this position paper we are focusing on the role of risk attitude (and, not discussed yet, the shape of the decision-maker's utility function) on strategic decisions (such as the decision whether or not to switch to a sustainable production method). Because of space limitations we will not further elaborate on the concept of risk perception, as it is a moderator in the relationship between risk attitude and behaviour, and not necessarily a driver.

### 3. Operational/Tactical versus Strategic Decisions

The conceptual foundations of strategic management were developed in the 1960s. Since that time, the strategic decision-making and/or management area has received much attention. Moore (1992), in an exhaustive overview on strategic management advances, presents the key-ideas of the authorities in the field, such as Chandler (1962), Ansoff (1965, 1984), Porter (1980, 1985), Andrews (1987), Quinn (1980). Although strategic theory and practice have been subjected to intensive research, using headings as business management or corporate strategic planning, which caused confusion about the exact content of the term, Moore (1992) argues that 'the sector has always addressed the same issue: the determination of how an organization, in its entirety, can be best directed in a changing world'. A central question that has been raised by researchers and practitioners is: How does an organization configure and direct its strategic activity to meet its economic objectives? To answer this question, a definition is needed that distinguishes the different kinds of decisions (operational/tactical versus strategic ones). The nature and the content of the decisions that decision makers deal with can be classified within the framework of decision classes, as developed in the strategic management literature.

The notion of decision classes was introduced by Ansoff (1965). He identified four basic decision types: strategy, policy, programme, and standard operating decisions. These decisions types deal with events that do or do not recur. Hence, these decisions are made under uncertainty. The associated risk is related to the quantity and quality of knowledge of the decision-maker (i.e., manager). The alternatives and the assigned probabilities for the occurrence of each alternative within each of these decision classes can often be identified.

Based on this concept, Ansoff (1965) ranks the above mentioned decision classes in the order of increasing level of ignorance among decision makers about alternative choices. Ignorance, in this context, means the extent to which the decision maker takes possible alternatives and the probability that a particular alternative might occur, into account when making decisions (e.g., Gavetti and Rivkin, 2005). The operational decisions, which include the standard operating procedures, rank lowest. These operating activities address the most frequently occurring and/or best-known events. The co-ordination of operating procedures in "a time-phased action sequence" is related to establishing a programme. These two types of decisions, the operational decisions and the decisions related to coordination, are associated with conditions of certainty or partial risk. Next in the ranking are policy decisions that are made under risk and uncertainty. Finally, strategies are at the top of the ranking and are "forced under conditions of partial ignorance" for the decision makers.

operational procedures. Besides the nature of each decision class, their precise definitions have been developed and discussed frequently in the management and marketing science literature, using terms like strategy, structure, and process (Moore, 1992).

Based on the work by, amongst others, Antony (1965), Capon et al, (1987), Bowman and Asch (1987), March (1988), Papadakis and Barwise (1998), we propose the following three criteria as the most important for describing the aforementioned decision classes: a) the nature of the activity that each decision deals with, b) the time Within this hierarchical framework of “the total decision space”, which is based on the different levels and sublevels of each decision class, the firm is viewed as a “resource-conversion process” (with human, physical, and monetary elements). So, the key-issue is how this process is managed. Since the nature of activities for each decision class differs, Ansoff (1965) identified three major decision classes: strategic, administrative, and operating decisions. Strategic decisions deal with the allocation of total resources among product-market opportunities. Administrative decisions are related to the organization, acquisition, and structuring of resources for optimum performance. The related policy issues, discussed above, are incorporated in this second class. Operating decisions include the budgeting and scheduling of resource applications and their related specific dimension of each type of decision, and c) the level of risk exposure associated with the decision. Below we propose definitions for each decision class in a way that will be useful to the position paper’s research objectives:

Strategic decisions may affect the whole company or a major part of its objectives and policies for an extended period of time (up to a period of 3-5 years). These types of decisions tend to deal with the levels of resources needed to achieve organizational goals and involve long-term relationships between the organization and its environment. Strategic decisions entail investment opportunities with high risk levels;

Administrative or tactical decisions may affect how the organization works for a limited period of time and they are primarily concerned with the most appropriate use of the resources already available in the company. These decisions take place within the context of the previous strategic decisions and have a longer time span than operational activities (e.g., one financial year). Most of the tactical decisions are made under certainty or partially risky circumstances (e.g. application of production technology);

Operational decisions involve the day-to-day, well-established procedures (e.g., supervision and control of resources) and, as such, realize the potential of tactical and operational decisions. The procedures used in operational decisions are classified as routine and information is unlikely to surprise the decision maker.

Among the three decision classes defined above, the strategic decisions are the ones that seem to take up much of the time of top management in every organization and have several distinguishing features compared to tactical and operational decisions. In large organizations, top management has a direct role in formulating the planning framework for strategic decision making (Marsh et al, 1988), because strategic decisions seem to involve the commitment of significant economic resources and have major long term consequences that are hard to reverse (Barwise et al, 1986). In addition, they often lead to changes in the firm’s organizational structure (Kriger and Barnes, 1992) and involve novel, complex, ill-structured, and interdependent

issues (Mintzberg et al, 1976), which entail high uncertainty (Bourgeois and Eseinhardt, 1988). While considerable attention has been paid to strategic decision making in large and diversified organizations, hardly any work has been done on the factors that drive the strategic decisions of owner-managers of SMEs (Robinson and Pearse, 1984; Shuman and Seeger, 1986). Research has not explicitly considered the characteristics of decision-makers in SMEs, when examining SMEs’ strategic behaviour. Decision-makers’ strategic choices reflect their strengths and weaknesses and satisfy their personal needs and objectives (Curtis, 1983). Thus, the factors that may drive strategic behaviour of SMEs seem to depend on the specific decision context.

To better understand strategic behaviour of SMEs in the domain of this position paper, the following questions need to be addressed (Andrews, 1987; Singleton and Hovden, 1987): What are the strategic opportunities that stakeholders and managers of SMEs are confronted with? What are the managerial capabilities and preferences of individuals to cope with a highly risky economic investment? What are the financial constraints that investors face with respect to their capital sources and anticipated returns? Do the strategic activities meet the desired level of economic contribution to society as a whole?

Here, we are interested in understanding the drivers of strategic decisions. That is, the SME’s decision-making behaviour regarding the transformation from a conventional SME to a sustainable SME. Furthermore we study the factors (e.g., farmers’ risk behaviour) that drive the behaviour of SMEs, when considering such a transition. Transforming to a sustainable production process implies that SMEs have to change their practices drastically. In fact, it implies a total overhaul of the SME’s production process and marketing strategy. Such a transition affects the whole enterprise, a major part of its objectives and policies for an extended period of time, and hence is a strategic decision made under risk. In the next section, we elaborate on the importance of risk preferences for the decision maker’s (i.e., the farmer’s) behaviour concerning operational and tactical decisions in the context of agriculture, and we discuss how the decision-maker’s strategic behaviour under risk can be predicted by examining the global shape of the utility function.

## 4. Strategic Decisions: Risk Attitudes & Utility Functions

Much theoretical and empirical work has been done in analyzing decision-maker behaviour under risk. Particularly in (agricultural) economics and management literature, there is a wide variety of research propositions on how risk preferences influence producer behaviour.

### 4.1. Selected Literature Overview

The dominant paradigm in (agricultural) economics and management science is the expected utility model (Meyer, 2002). The expected utility model is concerned with choices among risky prospects whose outcomes may be either single or multidimensional (Schoemaker, 1982). The goal of a decision maker (e.g., farmer) is the maximization of expected utility. In the expected utility framework, the shape of the utility function is assumed to reflect a decision maker's risk preference (Pratt 1964; Arrow, 1971). Therefore, the expected subjective utility function of any prospect reveals the individual's attitudes towards risk. There is a continuous stream of research on decision makers' risk preferences in agricultural economics (e.g., Anderson, et al, 1977; Smidts, 1990; Just and Pope, 2002; Hardaker et al, 2004; Eeckhoudt et al, 2005). Most of that research uses objective and subjective expected utility models and psychometric constructs, when analyzing producers' risk behaviour. Several authors have shown that decision makers can be simultaneously risk seeking and risk averse in different domains, implying that risk attitude is context specific (e.g., Payne et al, 1980; Smidts, 1997; Pennings and Smidts, 2000). We provide a short review of empirical and theoretical research topics that have been addressed frequently in the agricultural economics and management science literature, in the domain of risk and behaviour, in the context of agriculture.

Operational risky decisions concerning the optimum level of pesticides, use of fertilizers and biological pest controls, are analyzed in Carlson (1970), Moscardi and de Janvry (1977), Reicheldefer, K. (1977), Thornton (1985), Babcock et al, (1992), Greene et al, (2001), and Rook and Carlson (2001). These studies seem to suggest that the aversion of farmers towards risk, which is explained by a set of socioeconomic and structural variables, may be a critical factor for the determination of the use of pesticides or fertilizers during the production process. Also, risk-attitude is frequently cited as a determinant for the adoption and utilization of new technologies in day-to-day farm operations (e.g. Feder et al, 1981). Huisjman (1986) analyses how farmers' risk aversion causes slow adoption of new technologies. Murat and Khana, (2003) examine the extent to which farmers' risk aversion and uncertainties about production (e.g., soil fertility, weather) have an impact on their decisions to adopt site-specific technologies. Other studies

(e.g., Just and Pope, 1978; Roosen and Hennessy, 2003) have tried to identify the risk preferences of farmers using certain risk-reducing inputs during the life-cycle of a production phase. Empirical studies of the choice of farm cropping plans as a decision under risk have been conducted by, amongst others, Bousard and Petit (1967), Officer and Halter (1968), Scott and Baker (1972), Lin et al, (1974), Brink and McCarl (1978), and Linder and Gibbs, (1990). These studies explain the crop-related resource restrictions that farmers face and suggest that the choice of an optimal production level under these restrictions is, in most cases, influenced by farmers' risk preferences.

In many countries farmers have the opportunity to reduce price risks, which affect their income by means of various financial and marketing arrangements. Various authors, among others Francisco and Anderson (1972), Webster and Kennedy (1975), Dillon and Scandizzo (1978), Bond and Wonder (1980), Biswanger (1980), and Antwood and Bushema (2003), have conducted studies that deal directly with the attitudes of farmers towards income risk. These studies examine the effects of external environmental factors (e.g., policy changes, market volatility in periods of crisis), as well as farm-specific characteristics, on producers' risk behaviour. Studies by Martin and Hope (1984), Goodwin and Schoeder (1994), Collins (1997), Pennings and Meulenbergh (1997), Pennings and Leuthold (2000), Pennings and Garcia (2001), Grimes and Meyers (2001), Bjornson and Carter (2001), and Roe et al. (2004), among others, show that risk attitude is the most important variable related to hedging behaviour, both from a theoretical and empirical point of view. There is a large body on hedging in financial and agricultural economics literature, assuming that farmers can reduce price risk by offsetting the cash value of inventories, growing crops, and processing commitments with futures contracts. Futures markets, which are an example of a risk-reducing market institution, are widely available in industrial countries and help farmers to overcome price risk. In addition to futures and options markets, the most important risk-reducing alternatives include cooperative marketing and marketing boards. Zeuli (1999) discusses how agricultural cooperatives might enhance the risk-mitigation role they play for farmers.

Other studies in business economics and marketing-management literature have examined producers' risks regarding marketing-channel contracting and financial management decisions. Smidts (1990; 1997) investigates farmers' decision-making process with respect to the choice of a marketing strategy for ware potatoes. Pennings and Wansink (2004) provide evidence, by integrating elements from both the marketing and finance literature, that the interaction between risk attitude and risk perception is a strong predictor of contract behaviour. Pennings and Smidts (2000) provide valuable insights regarding the role that the risk attitudes of farmers, who are managers of SMEs, play in dynamic markets, as reflected in their market orientation and innovativeness, their desire to reduce fluctuations in profit margins, and their actual market behaviour (e.g., trading behaviour, choice of marketing channel, use of price-risk management instruments). Chatterjee et al, (1999) and Wang et al, (2003) discuss how price risks are associated with specific investments and how stakeholders need to diversify their product

portfolio when a firm is in financial distress. Other studies in behavioural finance explain how certain groups of investors behave, and, particularly, what kind of portfolios they choose to hold (e.g., Barberis and Huang, 2001; Huberman, 2001; Grinblatt and Keloharju, 2001). The literature reviewed above shows that risk is an important issue in agriculture and that it has an impact on the economic performance of producers. Furthermore, it indicates that producers' risk attitudes influence producers' day-to-day behaviour (operational) and short-term (tactical) decisions. However, our understanding of how risk attitude is related to strategic decisions is very limited. While such knowledge seems to be imperative for agricultural risk analysis, its research implications and for policy makers (Lagerkvist, 2005), to the knowledge of the authors hardly any study has been made on SME's strategic risk behaviour. We may hypothesize that risk attitude, as measured by curvature of the utility function, may influence strategic decisions. The rationale for this hypothesis is that strategic decisions, particularly the ones that we focus on (i.e., transition to sustainable production systems) are made under uncertainty. The uncertainty in this context is related to the economic viability of such a transition. Work done by Pennings and Smidts (2003) seems to question the validity of this hypothesis. They found that it is the global shape of the utility function that predicts strategic behaviour, instead of the risk attitude measured by the curvature of the utility function (which is a local measure). Theoretical and empirical work needs to be done on identifying the role of risk attitude and the global shape of the utility function on strategic behaviour. Such research will enable us to better understand and predict strategic decisions (e.g., transformation of SMEs toward sustainable production practices) and will guide policy makers in developing programs that influence such a transition in an effective and efficient manner.

#### **4.2. Strategic Behaviour & Shape of Global Utility Function**

Recent research by Pennings and Smidts (2003) and Pennings and Garcia (2005) has shown that strategic decisions are not so much related to the curvature of the utility function (i.e., the Pratt-Arrow coefficient of risk attitude), as to the global shape of the utility function. The global shape of the utility function is defined as the shape of the utility function across the entire relevant outcome domain (the outcome domain can be price, income, profit, etc.). Pennings and Garcia (2005) elaborate on Pennings and Smidts' work (2003) and indicate that the curvature of the utility function is a unidimensional measure, when measured with only one parameter (which is often done in the literature, where exponential and power functional forms are used to describe the decision maker's utility function). Most studies that use a Pratt-Arrow type of risk-aversion coefficient assume that the "curvature" is constant across the whole outcome range. This assumption implies that all information is collapsed in one parameter (one dimension), and hence it is very likely that a lot of relevant information is lost. One could think about this issue as running a factor analysis with only one factor; collapsing a multi-dimensional space into a single-dimension space. When the global shape is taken into account, one recognizes

that the curvature of the utility function may be different for different parts of the outcome range (e.g., an S-shaped utility function shows a convex curve below the point of inflexion and a concave utility function above). The approach of the global utility function treats the utility function as a multidimensional concept.

While Pennings and Smidts (2003) show that strategic behaviour can be predicted by examining the global shape of decision-makers' utility functions, they do not explain why a particular shape is associated with a particular strategic decision. This issue, which is crucial for the objectives of this position paper, will be addressed in this proposal. Pennings and Smidts (2003) used two functional forms (i.e., two shapes): fully concave or convex (which basically reflects the unidimensional "curvature", i.e., the Pratt-Arrow approach) and an S-shape (which reflects Prospect Theory). In section 6, we propose several research objectives relevant to the examination of the actual shapes of the global utility function and the decision-maker's characteristics that influence the functional form of that shape. The development of an empirical research design based on these research objectives allows us not only to test the hypothesis whether the global shape of the utility function drives strategic behaviour, but also to understand why it does. Thus, not only will we be able to predict strategic behaviour, but we will also be able to explain strategic behaviour. The latter is crucial for policy makers and SMEs that are dealing with strategic decisions (e.g., a transformation to sustainable agricultural production systems). A question related to the why-question is: does the global shape of the utility function of a decision maker change over time?

The two questions raised above must be addressed empirically if one wishes to understand what the drivers are of strategic decisions and how policy measures may affect those decisions. For example, if we are interested in stimulating farmers to make a strategic decision towards sustainable agriculture, we have to know the underlying drivers. Suppose we find that the global shape of the utility function is the driver, then the question becomes how policy makers can influence that shape. Much literature argues that preferences (and hence utility) are constructed (James Bettman, see the discussion of Pennings and Smidts 2003) and hence are driven by variables that describe the environment (such as the competitive environment; e.g., full competition vs. oligopoly). Others have argued that the global shape of the utility function is driven by personal characteristics of the decision maker and hence is a personality characteristic (Pennings and Garcia 2005).

Before formulating research propositions and questions for a future TransForum research project that may provide answers to the questions raised above, we need to make sure that we are able to measure risk attitude and the global shape of the utility function in a valid and reliable manner. The next section deals with risk attitude and utility measurement issues.

## 5. Risk Attitudes & Utility Functions: Measurement Issues

Extensive research has been done on how to measure risk preferences. In the literature, two major approaches towards risk attitude measurement can be distinguished: measures derived from the utility framework (von Neumann and Morgenstern 1947, Schoemaker 1982, Fishburn 1988), and measures derived from psychometrics (e.g., Miller et al. 1982, MacCrimmon and Wehrung 1986, Shapira 1995). Since the way in which risk attitude is conceptualized and measured affects our understanding of decision making under risk, it is important to understand the validity of risk-attitude measures.

The expected utility (EU) model formulates decision making under risk as a choice between alternatives, each represented by a probability distribution. Decision makers are assumed to have a preference ordering defined across the probability distributions. Risky alternatives can be ordered using the utility function  $u(x)$ . In this model, the curvature of the utility function  $u(x)$  reflects risk attitude (Keeney and Raiffa 1976). It is important to note that risk attitude refers to the curvature of the utility function for a specific domain, e.g., monetary outcomes of a business. Within the expected utility approach, one can also adjust the utility for strength of preference, in order to obtain a more accurate measure of risk attitude: the intrinsic (relative) risk attitude (Ellsberg 1954, Dyer and Sarin 1982, Bell and Raiffa 1982). The intrinsic risk attitude approach assumes that an individual's preference for risky choice alternatives is a combination of: (1) the strength of preference the individual feels for certain outcomes, and (2) attitude towards risk (cf. Smidts 1997). The outcomes of a lottery are transformed into subjective values under certainty by the strength-of-preference function  $v(x)$ , and these subjective values are subsequently evaluated under risk.

An observed difference between the utility and the strength-of-preference function is attributed to the influence of risk preference. Risk aversion (as indicated by  $u(x)$ ) is thus seen as the effect of diminishing marginal value (indicated by  $v(x)$ ) plus an aversion against the dispersion in subjective values (intrinsic risk attitude) (Smidts 1997). The traditional measure of risk attitude, the curvature of  $u(x)$ , in this view, thus reflects risk attitude and strength of preference combined. Several studies have provided empirical support for the relevance of the intrinsic risk attitude. Significant differences between  $u(x)$  and  $v(x)$  were found by Krzysztofowicz (1983a, b) after analyzing data of 34 respondents and by Keller (1985) in a study of 12 graduate students providing risky and riskless judgments. Recently, Smidts (1997) found strong empirical support

for the hypothesis that risk attitude and strength of preference are two distinctive constructs in a real economic setting with a large sample size ( $n=253$ ) and a longitudinal design. Also the study by Weber and Milliman (1997) provided empirical support for the intrinsic risk construct. Potentially, intrinsic risk attitude is a more accurate measure of the true risk preference of an individual (Weber and Milliman 1997, Smidts 1997, Pennings and Smidts 2000). Therefore, we expect that the intrinsic risk measure will perform better on construct validity than the risk attitude obtained by the certainty equivalence technique (e.g., lotteries) only.

In the standard psychometric approach, constructs such as risk attitude are measured by asking a respondent to indicate the extent to which he or she (dis)agrees with a set of statements (Nunnally and Bernstein 1994). Kunreuther and Ginsberg (1978), MacCrimmon and Wehrung (1986), and Shapira (1995), amongst others, conducted large-scale surveys and interviews investigating risk preferences using psychometric scaling procedures. Several researchers developed risk attitude scales and tested their psychometric properties (Miller et al. 1982, Jaworski and Kohli 1993, Childers 1986). However, these scales do not consider the domain of financial risks faced by owner-managers of SMEs.

Recently Pennings and Smidts (2000) compared the two major approaches based on their convergent, discriminant, and nomological validity, using data obtained from computer-assisted interviews with 346 owner-managers who made decisions about their own businesses.<sup>6</sup> While the measures demonstrate some degree of convergent validity, the measures based on the utility framework predicted actual market behaviour better than the psychometric scale. In contrast, the psychometric scale showed more coherence with self-reported measures, such as innovativeness, market orientation, and the intention to reduce risk. In the light of the apparently higher predictive validity of the utility-based measurements, Pennings and Smidts (2000) recommended elicitation methods based on the utility paradigm for understanding managerial decision making under risk.

### 5.1. Elicitation of the Utility Function

Based on the findings of Pennings and Smidts (2000), we propose to measure the points of the decision makers' intrinsic utility function. The intrinsic utility function, is the utility function corrected for the value function (also called the strength-of-preference function) to obtain the "true" utility function that reflects decision making under risk (Ellsberg 1954, Dyer and Sarin 1982). The intrinsic utility function is determined by relating the strength-of-preference function  $v(x)$  and the utility function  $u(x)$ , such that  $u(x) = f(v(x))$ . The intrinsic risk attitude measure is defined as  $-u''(v(x))/u'(v(x))$  (analogue to the Pratt-Arrow coefficient of risk aversion). It rep-

<sup>6</sup> Converged validity refers to the degree to which different measurements reflect the same construct, i.e., are positively correlated (Cook and Campbell, 1979). Discriminant validity is achieved when there is a divergence between measures of one construct and a related but conceptually distinct construct. Nomological validity refers to whether measures are related to other constructs in a way that is theoretically meaningful (Pennings and Smidts, 2000).

resents the remaining curvature in the utility function, after eliminating the nonlinear effect related to the value function  $v(x)$ .

The points at the utility function can be used to estimate the decision-makers' risk attitude, by estimating the curvature of the utility function (Pratt-Arrow coefficient of risk aversion) and by estimating the global shape of the utility function, using a functional form that explicitly takes the whole outcome domain into account (e.g., by using a more-dimensional functional form). The utility function can be measured using several elicitation techniques.

In table 2, we depict six utility elicitation techniques that have been frequently proposed theoretically and used in measuring utility and the strength of preference. We selected these six elicitation techniques based on the following criteria a) the degree of predictive validity, b) suitability for measuring risk attitudes using a survey-based instrument or experimental design, and c) the easiness of the task for the respondent. Here, we do not discuss these criteria, but present the procedures for measuring the decision maker's risk-attitude. The relevance of these criteria has been identified in the literature presented in table 1.<sup>7</sup> Below, we discuss briefly these measurement techniques.

Table 1. Elicitation Techniques for Utility and Strength of Preference

**Measurement Author(s) Techniques**

Utility Function:  $u(x)$

- I. Certainty Equivalence Fisburn (1967), Hull et al., (1973), Keeney and Raiffa (1976), La Valle, (1978) Pennings and Smidts (2000).
- II. Conjoint Tversky (1967), Anderson and Shanteau (1970), Wind (1982) Corstjens and Weistenstein (1982), Smidts, (1990).
- III. Willingness to Trade-off Sarin and Weber (1993), Weber and Milliman (1997), Weber and Hsee (1998),
- IV. Standard Sequence Wakker and Deneffee (1996), Abdellaoui (2000)

**Strength of Preference Function:  $v(x)$**

- V. Direct Rating Huber (1974), Stevens (1975), Eliashberg (1980), Smidts (1990)
- VI. Midvalue Splitting Fisburn (1967), Torgerson (1958), Green and Srinivasan (1978), Pliskin and Beck (1976), Smidts (1997).

<sup>7</sup> For an extensive review on utility assessment methods based on other criteria, the reader is referred to Farquahar (1984) and Smidts (1990, pp. 151-163).

One of the most commonly-used techniques to measure risk attitudes rooted in the expected utility framework is the Certainty Equivalence (CE) technique. The respondent is presented with an uncertain prospect, usually a binary lottery (e.g., lottery with two outcomes) and (s)he is asked to state a certain outcome  $w$ , called certainty equivalent (CE). Each choice situation requires that the respondent choose between a certain outcome and a binary lottery (Keeney and Raiffa, 1976). The respondent keeps specifying  $w$ , until he becomes indifferent between the lottery and the certain outcome. This indifference is arrived at in an iterative manner. A sequence of points is successively adjusted until indifference is established. After the respondent has indicated that (s)he is indifferent between the certain outcome and the uncertain prospect, a point at the respondent's utility function is obtained. A sequence of successive bisections results in a number of points of the utility function. The curvature of the utility function that is obtained from these utility points is a measure of risk attitude.

An alternative method for measuring risk attitude is the conjoint technique. This technique is very popular in marketing and consumer behaviour research (Green and Srinivasan, 1978). The conjoint measurement allows the analysis of preferences of multi-attribute choice alternatives. Instead of providing indifference judgments, as with the certainty equivalence (lottery) technique, the respondent has to rate or rank order a set of hypothetical profiles which consist of specific sets of levels (one per factor), known as stimulus (Tversky, 1969, Wind, 1982 and Corstjens and Weinstein, 1982). Each profile consists of a combination of levels for a number of attributes. Using appropriate estimation techniques (e.g., Ordinary Least Squares), the trade-off between levels of attributes can be obtained. Smidts (1990; 1997) specified two models to estimate the risk attitude of 218 Dutch farmers. These are the Mean-Standard Deviation Model (MSD), that asks a respondent to make a trade-off between expected value (mean) and standard deviation (risk) and the Ideal-Point model (IP), which makes a non-linear relationship between expected value and risk possible by including the variance assigned to a hypothetical conjoint profile (Coombs, 1975, MacCrimmon et al., 1980). In contrast to expectancy-value techniques that utilize compositional approaches, the conjoint technique is based on a decompositional approach, in which subjects judge a set of "total" profile descriptions. A profile in this context is a bundle of attributes that make up the product/service. This approach, which is based on some type of a composition rule (i.e. additive or multiplicative), results in a set of part-worths (i.e., values) for individual attributes that are most consistent with the subject's overall risk preferences (Green and Srinivasan, 1978).

The risk-return (e.g., risk-value) models also allow the estimation of risk attitude in a decompositional manner (e.g., Levy and Markowitz, 1979). In the risk-returns models, the valuation of

a risky prospect can be influenced by both the expected value of a prospect and its riskiness (Jia et al., 1999). Based on this notion, the decision maker's risk preference can be estimated (Sarin and Weber, 1993), utilizing a technique that takes into consideration his or her willingness to trade-off (WT) risk against a potential outcome (i.e., return). The respondent expresses an evaluation in terms of the amount of money that he or she is willing to pay for an uncertain option (X), and makes a judgment of perceived risk (R), typically using a rating scale.<sup>8</sup> The estimation of the decision maker's risk parameter can be interpreted as the relative weight assigned to risk, relative to expected return (Weber and Hsee, 1998). Recently, Pennings and Kleimuntz (2005) have developed an extended WT (EWT) risk preference measure in order to derive the decision maker's intrinsic risk preferences. They assess the subjective value of risky financial options X in the WT technique. First, they use the CE technique to assess the objective expected value of a risky option X, then they express this value in terms of the potential outcome (e.g., returns). The WT judgments of decision-makers are regressed on the subjective values of each risky option X and the decision maker's perceived risk for each option:  $EWT(X) = \alpha + \beta V(X) + \beta R(X)$ , where  $V(X)$  represents the subjective expected value obtained from the decision maker's strength-of-preference function and parameters  $\alpha$ ,  $\beta_e$ , and  $\beta_r$  are the intercept and the regression weights, the latter reflecting the decision maker's risk preference constructed, such that  $u(x_i) = i/n$  for  $i = 1, \dots, n$ . Abdellaoui (2000) showed that once a standard sequence of outcomes,  $x_0, \dots, x_n$ , has been determined using the method above, a standard sequence of probabilities can be determined. Abdellaoui (2000) recently proposed a two-step procedure to successively elicit an individuals' utility function  $u(x)$  and the probability weighting function  $w(x)$ . In decision making under risk, the psychological weight assigned to an outcome may not correspond to the probability of that outcome. The  $w(x)$  permits probabilities to be weighted nonlinearly, so that framing effects (caused by a special sequencing of choice questions, which may also cause probability distortion) are avoided (Gonzalez and Wu, 1999). The first step of Abdellaoui's (2000) procedure is using Wakker and Deneffe's (1996) trade-off technique to elicit  $u(x)$ . The trade-off technique works as follows. Define a two-outcome lottery  $(x, p; z)$  as a lottery that yields outcome  $x$  with probability  $p$  and outcome  $z$  with probability  $1-p$ . An individual is asked to compare lotteries  $(x_0, p; Z)$  and  $(x_1, p, z)$ , where  $x_1 < x_0 < Z < z$ . The values of  $p$ ,  $z$ ,  $x_0$ , and  $Z$  are fixed and  $x_1$  is varied until the individual reveals the following indifference:  $(x_0, p; Z) \sim (x_1, p, z)$ , where  $\sim$  denotes indifference. Then the process is repeated and the individual is asked to state the level of  $x_2$ , such that  $(x_1, p; Z) \sim (x_2, p, z)$ . Once, these indifferences are identified, it follows that  $u(x_1) - u(x_0) = u(x_2) - u(x_1)$ . That is, this technique allows the determination of equally spaced

<sup>8</sup> The perceived riskiness of a choice alternative may depend on a person's reference point that can be manipulated by outcome framing (Schurr 1987) and the outcome history of preceding decisions (Schurr 1987, Bottom, 1990). Weber and Milliman (1997) suggest that the differences in risky choices between decision makers should not automatically be interpreted as the result of decision makers' preferences for risk, but may also be the result of changes in their perception of the risks.

utility intervals or a "standard-sequence" of outcomes. The process can be repeated for any number of desired indifferences,  $x_0, \dots, x_n$ . As shown in Wakker and Deneffe (1996), a utility index can be in a similar fashion, such that a probability weighting function can be estimated. This allows one to determine whether an individual over- or under-weights low-, medium-, and high-probability events. Wakker and Deneffe's (1996) utility elicitation approach is advantageous, because (p. 1131) 'it is robust against probability distortions and misconceptions, which constitute a major cause of violations of expected utility and generate inconsistencies in utility elicitation.' As such, the trade-off approach permits unbiased estimation of utility functions. The direct rating and the mid-value splitting techniques are the most well-known and used techniques for the measurement of the strength of preference. Different question formats such as 5-, 7-, or 9-point category scales, graphic scales, and constant scales have been developed for making rating assessments (Stevens, 1985). Also, an interval scale measurement, that involves fixing boundaries of the scale (a lower and an upper bound) has been used. The respondent expresses the intensity (e.g., strength of preference) of a stimulus by assigning a number between the two fixed bounds (Huber, 1974). In the mid-value technique, the respondent specifies whether a change from boundary point  $x_i$  to boundary point  $x_j$  equals in value a change from boundary point  $x_i$  to boundary point  $x_k$  considering that  $x_i < x_j < x_k$ . Through iteration, a value for point  $x_j$  can be found, at which the respondent is indifferent between both changes. As a result, the first midvalue is assessed (Dyer and Sarin 1982). Subsequent midvalue estimations will result in a number of points of the value function (Eliashberg, 1980).

Table 2. Utility Functional Forms

*Utility Forms Author(s) u(x)*

Quadratic :  $u(x) = ax + bx^2 + c$  Hicks (1962), Arrow (1965), Bell (1988), Levy (1992), Jia and Dyer (1996)

Log Inverse Power Transformation : Luce (1980), Bewley and Fiebig (1988), 1 Meade and Islam (1995), Pennings and  $u(x) = 1 + \exp[-a - \beta(1/\kappa)\log(1+\kappa x)]$ , Smidts (2003)

Point of Inflection:  $u(x) = 1/2(1 - k/b)$

$1 - e^{-a(x-x_0)}$  Tsiang (1972), Sarin (1987), Bell (1995);

Negative Exponential:  $u(x) = 1 - e^{a(x_0 - x)}$  Pennings and Smidts (2000, 2003), Pennings and Garcia (2005)

$\lambda$  Brockett and Golden (1987), Bell(1988),  $Polynex : u(x) = \sum_{i=1}^n p_i x^i$  Fraquhar and Namakura (1987), Saha, (1993),

Namakura (1996)

$\sum_{j=1}^m \lambda_j$  Tversky, 1979, Green and Srinivasan, 1978, Multiattribute:  $P_{ik} = \alpha_i + \sum_{k,l,j} \gamma_{k,l,j} p_{i,j}$  Bell, 1979  $j=1$

Behavioural research indicates that assessments of utility functions should be considered a difficult task which must be handled with great care (Farquhar, 1984). According to Smidts (1990), the following issues should be considered when eliciting utility functions: providing a clear and unambiguous decision context, specifying the attribute of interest clearly, training the respondent and the interviewer in the assessment task, and checking for inconsistencies in responses. Furthermore it is recommended to have more than one technique to elicit the utility function and the value function, since this ensures that the conclusions regarding the relationship between the shape of the utility function and strategic behaviour to be invariant.

There are various algebraic specifications of a utility function that often give similar measures of goodness of fit to elicit utility points (Hardaker et. al, 2004). In Table 2, five utility functional forms are displayed. The description of the functional specifications and the related discussion on their risk properties are beyond the scope of this position paper, but are readily available in Farquhar and Namakura (1987) and the cited literature in table 2. However, we should briefly mention here that many decision theoreticians support the notion that the measures of absolute risk aversion, as indicated by the Pratt-Arrow coefficients of risk-attitude, provide one way for choosing suitable forms (Arrow 1971, 1975)<sup>9</sup>. Smidts (1990) discussed behavioural assumptions, relying on Tsiang's (1992) proposed conditions for the acceptability of a utility functional form (where the attribute is wealth). First, the utility function of wealth is assumed to be increasing and this implies that a decision maker is risk averse towards wealth (concave-shaped). Second, if a decision maker becomes wealthier, (s)he is equally or less risk-averse for equal absolute changes in his/her wealth (e.g., plus or minus an amount of money) and equally or more risk-averse for proportional changes in wealth (e.g., plus or minus 10% of his/her wealth).

Several studies in agricultural economics confirm the assumption of the decreasing absolute risk attitude (e.g., Hamal and Anderson, 1982, Hildreth and Knowles, 1986). One of the functions that meet the above behavioural assumptions is the negative exponential function. According to Eliashberg and Hauser (1985) the negative exponential utility functions dominate decision theory and analysis. Recent theoretical and empirical work proposes that the inverse power transformation function (Meade and Islam, 1995, Pennings and Smidts, 2003) and the polynex utility functions (sum of polynomials and exponential functions) (e.g., Namakura, 1996) are functional forms that exhibit great flexibility with respect to increasing or decreasing risk aversion over the whole outcome domain.

<sup>9</sup> Risk aversion is indicated by a utility function that shows decreasing marginal utility as the level of the payoff increases. The simplest measure of risk aversion that is constant for a positive linear transformation of the utility function is the absolute risk aversion function  $r = -u(2)(w) / u(1)(w)$ , where  $u(2)$  and  $u(1)$  represent the second and the first derivatives of the utility function, respectively (Pratt, 1964, Arrow, 1965), and  $w$  represents the decision maker's wealth.

## 6. Proposed Research Framework for Future TransForum Research

After reviewing the theoretical and methodological advances in decision making under risk above, with special reference to the context of this position paper (e.g., SMEs' strategic decisions whether or not to switch to sustainable production systems), we postulate research propositions regarding the drivers of decision-makers' strategic behaviour. Furthermore, we propose a decision context for examining these propositions.

### 6.1 Preliminary Research Propositions

In the economics literature, concave utility functions have been associated with risk aversion and convex ones with risk-seeking behaviour. The curvature of the utility function reflects decision makers' risk attitude and it is a convenient measure for empirical researchers, as it can be estimated in a single parameter model. However, it does not account for the entire outcome range of the relevant attribute  $x$  used to obtain the utility function. Tversky and Kahneman (1979) proposed that the shape of the utility function differs in the domains of gain and losses. Evidence that a more multidimensional shape (global shape) of the utility function could be useful for improving our understanding of strategic decision made under risk is provided by, amongst others, Hershey and Schoemaker (1982), Pennings and Smidts (2003) and Pennings and Garcia (2005). Therefore we propose that: the global shape of the utility function will provide more information about the strategic decision regarding the transition to sustainable production practices than the unidimensional (local) measure of the utility function (e.g., the Pratt-Arrow coefficient of risk aversion).

In section 2 we identified that risk perception may have a moderating effect on the relationship between risk attitude, and for that matter the global shape of the utility function, on strategic behaviour. We propose that policy that reduces the perceived risk of SMEs when they make strategic decisions will stimulate the transition to sustainable production process of risk-averse SMEs. The rationale behind this proposition is that risk-averse SMEs dislike the risk that is embedded in the strategic decision, which will negatively influence the transition towards sustainable production practices. This negative influence of risk attitude is lowered when SMEs perceive less risk.

The occurrence of a multidimensional (e.g., S-shaped) utility function may imply different behaviour of a decision maker across the outcome domain. An example of an outcome domain  $x$  would be profit. As a result, decision makers may have different risk attitudes. We propose that these different risk attitudes across the outcome domain  $x$  may imply different operational or tactical behaviour (e.g., whether or not to apply a particular pesticide) depending on the out-

come  $x$ , but that this does not influence strategic behaviour.

Different decision makers may have different shapes of the global utility function. Currently four shapes have been examined: fully concave, fully convex, S-shaped and inverse S-shaped. However these shapes were “forced” by the functional specification of the researcher, hence many more shapes may actually exist. We propose that the heterogeneity in the global shape of utility functions is played out in differences in decision makers’ risk strategic behaviour (e.g., choice of production system).

While empirical works in management science highlight that the global shape of the utility function may drive decision makers’ risk-strategic behaviour, they do not explain, however, which factors drive the utility function (preferences) of decision makers. The latter is extremely important for policy makers. We propose that the shape of the utility function may be influenced by personal characteristics of the decision maker (age, education, entrepreneurial capability), firm structure (e.g., financial position of the firm), and the firm’s environment. The environment, in this context, refers to factors such as the use of information about the business environment (e.g., new ideas for product/services design, competitors’ behaviour) (Kohli and Jaworski, 1990), legal framework, and governmental policy measures. We propose studying these environmental factors that drive the global shape of the utility function, as they provide us with policy tools to influence the shape of the function, and hence the strategic decision regarding the transition to sustainable production practices.

As explained in section 3, in the management sciences, a distinction is made between the operational/tactical and strategic decisions. Strategic decisions entail a high degree of uncertainty and are made for a relatively long time window. A question related to what drives decision makers’ strategic behaviour is: does the global shape of the utility function change over time? We propose to examine whether the global shape of the utility function changes over time and to examine the role of environmental factors (e.g., policy measures) in this change.

So far we have talked about sustainability in terms of production practices. However, an SME in the process of making a transition to a sustainable production process will be concerned about the economic sustainability of such a decision. Therefore we propose to examine SMEs’ perception regarding economic sustainability when making a decision to switch to sustainable production practices and how this perception is related to the global shape of the utility function.

## **6.2 Decision Context of Future TransForum Research**

While research has been done on operational and tactical decisions related to biophysical, human capital, and economic determinants for the adoption of sustainable technologies (e.g., Feder et al, 1982, Comer et al, 1999, Lohr and Park, 2001, Arellanes and Lee 2003), no work has been done on SMEs behaviour regarding switching from a conventional production system to a sustainable one (or vice versa), which is a strategic decision.

To test the relationships between the shape of the utility function and strategic behaviour, as described in the previous sections, a decision context is required in which the decision maker has a prominent influence on the structural and organizational decisions that have a long-term effect on his or her firm’s structure and performance. The decision context of the Dutch agricultural sector meets these requirements. The Dutch agricultural sector consists of owner-managers who determine the SME’s organization and who are all working in a volatile economic environment (e.g., volatile market prices). In the light of the TransForum research proposal, we distinguish two production systems: the “conventional production system” (CPS) and the “organic production system” (OPS). A CPS is defined as an industrialized production system characterized by mechanization and use of synthetic inputs. An OPS is defined as an ecological production management system that promotes and enhances biodiversity and biological cycles. A consequence of the production system chosen is that owner-managers of conventional SMEs who choose for the OPS are confronted with high risks related to the economic viability of the investment. These risks are related to whether the technology will perform, the long term costs of the technology and the revenues of the produce. Often, it is unclear whether the products produced in an OPS framework will yield revenues that are able to cover the increased costs. The context that we propose for future research is livestock production and horticulture. Both sectors have been challenged, as many local governments and also the national government are worried about the sustainability of these two sectors that are important exporting sectors in the Netherlands. The Dutch hog industry has been an innovative industry that has reached a yield / input ratio. However, concerns have been raised whether this industry is sustainable. While various organizations and universities, Dutch ministries of Agriculture and Economic Affairs and industry groups (LTO Nederland) have focused on how to create a sustainable hog marketing channel (with projects such as IKB and Milieukeur), no research and hence knowledge is available about how hog farmers make that strategic decision to employ a sustainable production system. This knowledge is crucial when policy makers want to create sustainable food production systems (see for example the report of the Ministry of Agriculture, entitled “Duurzaamheid en Voortrekkersrol Biologische Keten” by Arendse, Janssen, van Winden and Leferink, September 2004).

Not only in the Dutch hog industry is there interest in, and has there been research on sustainable agricultural marketing channels. For example in the flower sector interest has been shown by growers, auctions (VBA and FloraHolland), wholesalers, product boards (Productschap Tuinbouw), financial institutions (e.g., Rabobank), growers’ associations (LTO-Nederland), the Dutch Ministry of Agriculture and the Dutch Minister of Economic Affairs in developing sustainable marketing channels (see for example the work by the Stuurgroep Tuinbouwinnovatie, report of July 6, 2005, Produktschap Tuinbouw). Various organizations such as AKK ([www.akk.nl](http://www.akk.nl)) and KLICKT ([www.KLICKT.org](http://www.KLICKT.org)) addressed the issue of sustainable production channels. However, no research has been done on how we can explain and predict whether or not a SME (e.g. grower or farmer) is switching to sustainable production practices. This understanding is

crucial, and should be the starting point, when one wishes to develop sustainable agricultural marketing channels. This position paper provides the framework to address this crucial issue of how to explain and predict SMEs' transition to sustainable production practices.

## References

- Abdellaoui, M. "Parameter-Free Elicitation of Utility and Probability Weighting Functions", *Management Science*, 46, 1497-1512.
- Anderson J. R., Dillon J.L., and B. Hardaker (1977). *Agricultural Decision Analysis*. Iowa State University Press, Ames.
- Anderson, N.H. and J.C. Shanteau. (1970). "Information Integration in Risky Decision Making", *Journal of Experimental Psychology*, 84, 441-451.
- Andrews K. R. (1987). *The Concept of Corporate Strategy*. Homewood Illinois, R. D. Irwin, Inc., 3rd edition.
- Ansoff, H. I. (1965). *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. McGraw-Hill Inc., revised 1987.
- Ansoff, H. I. (1984). *Implanting Strategic Management*. Prentice Hall International Inc.
- Anthony R.N. (1965). *Planning and Control a Framework for Analysis*, Graduate School of Business Administration, Harvard University Publications.
- Antwood, J.A. and D.E. Bushema. (2003). "Evaluating the Magnitudes of Financial Transactions Costs on Risk Behaviour", *Agricultural Systems*, 75, 235-249.
- Arellanes, P. and D. R. Lee. (2003). "The Determinants of Adoption of Sustainable Agriculture Technologies: Evidence from The Hillsides of Honduras", *IAAE Proceedings*, ISBN: 0-958-46098-1, 693-699.
- Arrow, K. J. (1965). *Aspects of The Theory of the Risk Bearing*. Yrjö Jahnssonin Säätiö, Academic Bookstore, Helsinki.
- Arrow, K. J. (1971). *Essays in The Theory of Risk Bearing*. Markham, Chicago.
- Campbell, D.T. and D.W. Fiske. (1959). "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix", *Psychological Bulletin*, 56, 81-105.
- Barwise, P., Marsh P., Thomas, K., and R., Wensley. (1986). "Research on Strategic Investment Decisions", in: McGee J., and H., Thomas (Eds.), *Strategic Management Research: A European Perspective*, 23-52, New York and Chichester, UK: John Wiley.
- Bell, D. E. (1995). "Risk, Return and Utility", *Management Science*, 41, 21-30.
- Bell, D. E., (1979). "Multiattribute Utility Functions: Decomposition Using Interpolation", *Management Science*, 25, 744-753.
- Bell, D.E. (1988). "One Switch Utility Functions and a Measure of Risk", *Management Science*, 34, 1416-1434.
- Bell, D.E. and H. Raiffa. (1982). "Marginal Value and Intrinsic Risk Attitude". In H. Kunreuther, ed. *Risk: A Seminar Series*. International Institute for Applied Systems Analysis, Laxenburg, Austria, 325-349.
- Bewley, R. and D. G. Fiebig (1988). "A Flexible Logistic Growth Model with Applications in Telecommunications", *International Journal of Forecasting*, 4, 177, 192.

Bhoovaraghavan, S., Vasudevan, A., and R. Chandran. (1996). "Resolving the Process vs. Product Innovation Dilemma: A Consumer Choice Theoretic Approach", *Management Science*, 42, 232-246.

Biswanger, H. P. (1980). "Attitudes Toward Risk: Experimental Measurement in Rural India", *American Journal of Agricultural Economics*, 62, 395-407.

Bjornson B. and C. A. Carter. (1997). "New Evidence on Agricultural Commodity Return Performance under Time-Varying Risk", *American Journal of Agricultural Economics*, 1997, 918-938.

Bond G.E. and B. Wonder. (1980). "Risk Attitudes Amongst Australian Farmers", *Australian Journal of Agricultural Economics*, 24, 16-33.

Bottom, W.K. "Adaptive Reference Points in Integrative Bargaining", (1990). In: K. Borchering, O.I. Larichev, and D.M. Messick (Eds.), *Contemporary Issues in Decision Making*, Elsevier science Publishers, The Netherlands.

Bourgeois, L. J. and K. M. Eisenhardt. (1988). "Strategic Decision Processes in High Velocity Environments: Four Cases in the Microcomputer Industry", *Management Science*, 34, 816-835.

Bousard J.M. and M. Petit (1967). "Representation of Farmers Behaviour Under Uncertainty with a Focus-Loss Constraint", *Journal of Farm Economics*, 49, 869-880.

Bowman C. and D. Asch. (1987). *Strategic Management*. MacMillan Education Ltd. Brink L. and B. McCarl (1978). "The Tradeoff Between Expected Return and Risk Among CornBelt Farmers", *American Journal of Agricultural Economics*, 60, 259-263.

Brockett, P. L. and L. L. Golden (1987), "A Class of Utility Functions. Containing All The Common Utility Functions," *Management Science*, 33, 955-964. Brockett, P. L., and L. L. Golden. (1985). "A Class of Utility Functions Containing All The Common Utility Functions

Bromiley, P., and K.D., Miller, (1990). "Strategic Risk and Corporate Performance: An Analysis of Alternative Risk-Return Relationships", *Academy of Management Journal*, 33(4):756-779.

Capon N., Farley J.U., and J.M. Hulbert. (1987). *Corporate Strategic Planning*. New York. Columbia University Press.

Cargill, T.F., G.C. Rausser. 1975. "Temporal Price Behaviour in Commodity Futures Markets", *Journal of Finance*, 30, 1043-1053.

Carlson, G. (1970). "A Decision Theoretic Approach to Crop Disease Prediction and Control", *American Journal of Agricultural Economics*, 52, 216-223.

Chandler Jr A. D. (1962). *Strategy and Structure*. MIT Press,

Chatterjee, S., Lubatkin, M., and W.S. Schulze. (1999). "Toward a Strategic Theory of Risk Premium: Moving Beyond CAMP", *Academy of Management Review*, 24, 556-567.

Childers, T.L. (1986). "Assessment of the Psychometric Properties of an Opinion Leadership Scale", *Journal of Marketing Research*, 23, 184-188.

Churchill, G.A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs", *Journal of Marketing Research*, 16, 64-73.

Collins J. M., and T. W., Ruefli, (1992). "Strategic Risk an Ordinal Approach", *Management Science*, 38(12): 1707-1731.

Collins R.A. (1997). "Towards a Positive Economic Theory of Hedging", *American Journal of*

*Agricultural Economics*, 79, 488-499.

Comer, S., Ekamen E., Muhammad S., Singh S., and F. Tegege, (1999). "Sustainable and Conventional Farmers: A Comparison of Socio-Economic Characteristics, Attitudes and Beliefs", *Journal of Sustainable Agriculture*, 15(1): 29-45.

Cook, T.D., D.T. Campbell. (1979). *Quasi-experimentation. Design and Analysis Issues for the Field Settings*. Rand McNally, Chicago.

Coombs, C.H. (1975). "Portfolio Theory and the measurement of risk", In: M. F. Kaplan and S. Schwartz (Eds.), *Human Judgment and Decision Processes*, Academic Press, Inc., New York, 63-85.

Corstjens, M. L. and D. Weinstein (1982). "Optimal Strategic Business Units Portfolio Analysis", In: A.A. Zoltners (Ed.), *Marketing Planning Models. TIMS Studies in The Management Sciences*, 18 (pp. 141-160). North-Holland, Amsterdam.

Curtis, D. A. (1983). *Strategic Planning for Smaller Business*. Lexington, MA: D. C. Heath & Co.

Dillon J.L. and P.L. Scandizzo. (1978). Risk Attitudes of Subsistence Farmers in Northeast Brazil: A Sampling Approach", *Australian Journal of Agricultural Economics*, 60, 425-435.

Douglas, G.K. (1984). *Agricultural Sustainability in a Changing World Order*. Boulder CO: Westview Press.

Dyer, J.S. and R.K. Sarin. (1982). Relative Risk Aversion", *Management Science*, 28, 875-886.

Eeckhoudt, L., Golier C., Schlesinger, H. (2005). *Economic and Financial Decisions under Risk*. Princeton University Press, U.S.

Eisenhardt K.M. and M. J., Zbaracki, (1992). "Strategic Decision Making", *Strategic Management Journal*, (Winter): 17-37.

Eliashberg, J. (1980). "Consumer Preference Judgments: An Exposition with Empirical Applications", *Management Science*, 26, 60-77.

Eliasheberg J. and J.R. Hauser. (1985). "A Measurement Approach for Modeling Consumer Risk Preference", *Management Science*, 31, 1-25.

Ellsberg, D. (1954). "Classic and Current Notions of Measurable Utility", *The Economic Journal*, 64, 528-556.

Farquhar, P. H. and Y. Namakura, (1987). "Constant Exchange Risk Properties", *Operations Research*, 35, 206-214.

Farquhar, P. H. (1984). "Utility Assessment Methods", *Management Science*, 30, 1283-1300.

Feder, G., R. E. Just and D. Zilberman (1982). *Adoption of Agricultural Innovation in Developing Countries: A Survey*. World Bank Staff Working paper No. 542. The World Bank, Washington, D.C.

Fisburn, P. C. (1968). "Utility Theory", *Management Science*, 14, 335-378.

Fisburn, P.C. (1967). "Methods of Estimating Additive Utilities", *Management Science*, 13, 435-453.

Fishburn, P. C. and G. A. Kochenberger (1979). "Two-Piece Von Neumann-Morgenstern Utility Functions", *Decision Science*, 10, 503-518.

Fishburn, P.C. (1988). "Normative Theories of Decision Making under Risk and Uncertainty", In:

Bell et al. (Eds). *Decision Making. Descriptive, Normative and Prescriptive Interactions*, Cambridge University Press, Cambridge, 78-98.

Francis, C. and G. Youngberg. (1990). *What is Sustainable Agriculture?* Wiley, New York.

Francis E.M. and J.R. Anderson (1972). "Change and Choice West of the Darling", *Australian Journal of Agricultural Economics*, 16, 82-93.

Gavetti, G and J.W. Rivkin. (2005). "On the Origin of Strategy: Action and Cognition over Time", Working paper Harvard Business School, Boston, MA.

Gonzalez, R. and G. Wu. (1999). "On the Shape of The Probability Weighting Function", *Cognitive Psychology*, 42, 1676-1690.

Goodwin, B. K. and T. C. Schroeder. (1994). "Human Capital, Producer Education Programs, and the Adoption of Forward Pricing Methods", *American Journal of Agricultural Economics*, 76, 936-947.

Green, P. and V. Srinivasan. (1978). "Conjoint Analysis in Consumer Research: Issues and Outlook", *Journal of Consumer Research*, 5, 103-123.

Grimes G. & Meyers S. (2001). "Hog Marketing Contract Study", University of Missouri and the National Pork Board.

Guttman, L. (1944). "A Basis for Scaling Quantitative Data", *American Sociological Review*, 9, 139-150.

Hamal, K.B. and J.R. Anderson. (1982). "A Note on Decreasing Absolute Risk Aversion Among Farmers in Nepal", *Australian Journal of Agricultural Economics*, 26, 220-225.

Han, J.K., Kim, N., and R.K. Srivastava (1998). "Market Orientation and Organizational Performance: Is Innovation the Missing Link?", *Journal of Marketing*, 62, 30-45.

Hardaker, J.B., Huirne, R. B. M., Anderson J. R., and G. Lien. (2004). *Coping with Risk in Agriculture*. Oxford University Press, second edition, 2004

Harris, J. M. (2000). *Rethinking Sustainability: Power Knowledge, and Institutions*. Ann Arbor: University of Michigan Press.

Hersey, J. C., and P. H. J. Schoemaker. (1980). "Risk Taking and Problem Context in The Domain of Losses: An Expected Utility Analysis", *Journal of Risk and Uncertainty*, 47, 111-132.

Hicks, J. (1962). "Liquidity", *Economic Journal*, 72, 787-802.

Hildreth C. and G.J. Knowles. (1986). "Farmers Utility Functions", In: Goel, P.K. and A. Zelter (Eds.), *Bayesian Inference and Decision Techniques. Essays in honor of Bruno de Finetti*, North Holland, Amsterdam, 291-317.

Hosmer, D.W., Jr. and S. Lemeshow. (1989). *Applied Logistic Regression*. Wiley, New York.

Huber, G.P. (1974). "Multiattribute Utility Models: A review of Field and Field like Studies", *Management Sciences*, 20, 1393-1402.

Huijsman, A. (1986). *Choice and Uncertainty in a Semisubsistence Economy. A Study of Decision Making in a Philippine Village*. Ph.D. Thesis, Wageningen University, The Netherlands.

Hull, J. Moore P.G. and H. Thomas. (1973). "Utility and Its Measurement", *Journal of the Royal Statistical Society, Ser. A*, 136, 226-247.

Jaccard, J., Turrisi, R., and C.K., Wan. (1990). *Interaction*

*Effects in Multiple Regression*. Sage Publications, New York.

Jaworski, B.J., A.K. Kohli. (1993). *Market orientation: antecedents and consequences*. *Journal of Marketing*, 57, 53-70.

Jemison, D. (1991). "Risk and The Relationship Among Strategy, Organizational Processes, and Performance," *Management Science*, 33(9):1087-1101.

Jia, J. and J. S. Dyer (1996). "A Standard Measure of Risk and Risk-Value Models", *Management Science*, 45, 519-532.

Jia, J. Sye, J. and C. Butler. (1999). "Measures of Perceived Risk", *Management Science*, 45, 519-532.

Jöreskog, K. G. and D. Sörbom. 1996. *PRELIS 2: User's Reference Guide*. Scientific Software International Inc., Chicago.

Jöreskog, K. G., D. Sörbom. 1993. *LISREL 8: Structural Equation Modeling with theSIMPLIS Command Language*. Scientific Software International Inc., Chicago.

Just E. R. and R. D. Pope (Eds.) (2002). *A Comprehensive Assessment of the Role of Risk in U.S. Agriculture*, Kluwer Academic Publishers.

Just, R. E. and R.D. Pope. (1978). "Stochastic Specification of Production Functions and Economic Implications", *Journal of Econometrics*, 7, 67-86.

Kahneman, D. and A. Tversky. (1979). "Prospect Theory: An Analysis of Decision Under Risk", *Econometrica*, 47: 263-291.

Keeney, R. L. and H. Raiffa. (1976). *Decisions with Multiple Objectives: Preferences and Values Tradeoffs*. Wiley, New York.

Keeney, R.L. and H. Raiffa. (1976). *Decisions With Multiple Objectives: Preferences and Value Tradeoffs*. Wiley, New York.

Keller, L.R. (1985). "An Empirical Investigation of Relative Risk Aversion", *IEEE Transactions on Systems, Man and Cybernetics*, 15, 475-482.

Knight, F. H. (1921). *Risk, Uncertainty and Profit*. Boston, MA

Kohli, A.K. and B.J. Jaworski. (1990). "Market Orientation: The Construct, Research Propositions, and Managerial Implications", *Journal of Marketing*, 54, 1-18.

Kruger, M.P. and L.B. Barnes. (1992). "Organizational Decision Making as Hierarchical Levels of Drama", *Journal of Management Studies*, 27(4),363-375.

Krzysztofowicz, R. (1983a). "Strength of Preference and Risk Attitude in Utility Measurement", *Organizational Behaviour and Human Performance*, 31, 88-113.

Krzysztofowicz, R. (1983b). "Risk Attitude Hypotheses of Utility Theory", In: Stigum, B.P., F. Wenstöp, (Eds), *Foundations of Utility and Risk Theory with Applications*, Reidel, Dordrecht, 201-216.

Kunreuther, H.C. and R. Ginsberg. (1978). *Disaster Insurance Protection: Public Policy Lessons*. Wiley, New York.

Kürberger, A. Schulte-Mecklenbeck, M., and J. Perner, (1999). "The Effects of Framing, reflection, Probability, and Payoff on Risk Preferences in Choice Tasks", *Organizational Behaviour and Human Decision Processes*, 78: 204-231.

Lagerkvist C.J. (2005). "Assessing Farmer's Risk Attitudes based on Economic, Social, Personal,

and Environmental Issues", Selected Paper for Annual Meeting of American Agricultural Economics Association, July, 24-27, 2005, Providence, Rhode Island.

Lance, C.E., J.A LaPointe, S.A. Fiscaro. (1994). "Tests of Three Causal Models of Halo rater Error", *Organizational Behaviour and Human Decision Processes*, 57, 83-96.

LaValle, I.H. (1978). *Fundamentals of Decision Analysis*, Holt, Rinehart, and Winston, New York.

Leavitt, C., J. Walton. (1975). "Development of a Scale for Innovativeness", in: Schlinger, M.J. (Ed.) *Advances in Consumer Research*, Ann Arbor, Association of Consumer Research, 545-554.

Levy, H. (1992). "Stochastic Dominance and Expected Utility: Survey and Analysis", *Management Science*, 38, 555-583.

Levy, H. and H. Markowitz. (1979). "Approximating Expected Utility by a Function of Mean and Variance", *American Economic Review*, 69, 308-317.

Levy, H., and H. Markowitz. (1979). "Approximating Expected Utility by a Function of Mean and Variance", *American Economic Review*, 69, 308-317.

Likert, R. 1932. "A Technique for the Measurement of Attitudes", *Archives of Psychology* no 40.

Lin W., Dean W. and CV Moore. (1974). "An Empirical Test of Utility Versus Profit Maximization in Agricultural Economics", *American Journal of Agricultural Economics*, 56, 497-508.

Lindner R. and M. Gibbs. (1990). "A Test of Bayesian Learning from Farmer Trials of New Wheat Varieties", *Australian Journal of Agricultural Economics* 34, 21-38.

Lohr, L. and T. A. Park. (2001). "Promoting Sustainable Insect Management Strategies Learning From Organic Farmers" Working Paper, Dept. of Agricultural and Applied Economics, University of Georgia.

Luce R.D. (1980). "Several Possible Measures of Risk", *Theory and Decision*, 12, 217-228/Correction 1981, 13, 381.

MacCrimmon, K. R., D. A. Wehrung. (1986). *Taking Risks: The Management of Uncertainty*. The Free Press, New York.

MacCrimmon, K. R., D. A. Wehrung. (1990). "Characteristics of Risk Taking Executives", *Management Science*, 36, 422-435.

March, J. G. (1988). *Decisions and Organizations*. Oxford: Basil Blackwell.

March, J., and Z. Shapira. (1992). "Variable Risk References and the Focus of Attention", *Psychological Review*, 99, 172-183.

Marsh, P., Barwise P., Thomas K., and R., Wensley. (1988). "Managing Strategic Investment Decisions", in: AM Pettigrew (Eds.), *Competitiveness and the Management Process*, 86-136. Oxford: Basil Blackwell.

Martin L.J. and D. Hope (1984). "Risk and Returns Form Alternative Marketing Strategies for Corn Producers", *The Journal of Futures Markets*, 4, 513-530.

Meade, N. and T. Islam. (1995). "Forecasting with Growth Curves: An Empirical Comparison", *International Journal of Forecasting*, 11, 199-215.

Meyer J. (2002). "Expected Utility as a Paradigm for Decision Making in Agriculture", in: Just E. R. and R. D. Pope (Eds.) (2002). *A Comprehensive Assessment of the Role of Risk in U.S. Agriculture*, Kluwer Academic Publishers.

Miller, D., M.F.R. Kets de Vries, J. Toulouse. (1982). "Top Executive Locus of Control and Its Relationship to Strategy-making, Structure, and Environment", *Academy of Management Journal*, 25, 237-253.

Mintzberg, H. D., Raisinghani D., and A. Theoret, (1976). "The Structure of "Unstructured" Decision Processes", *Administrative Science Quarterly*, 21, 246-275.

Moore J. I. (1992). *Writers on Strategy and Strategic Management*. Penguin International Business and Economics Book Publications.

Nakata, C., K. Sivakumar. (1996). "National Culture and New Product Development: An Integrative Review", *Journal of Marketing*, 60, 61-72.

Namakura, Y. (1996). "Sumex Utility Functions", *Mathematical Social Science*, 31, 39-47.

Narver, J.C., S.F. Slater. (1990). "The Effect of a Market Orientation on Business Profitability", *Journal of Marketing*, 54, 20-35.

Neumann J. von and O. Morgenstern. 1947. *Theory of Games and Economic Behaviour* (2nd Ed.). Princeton University Press, Princeton.

Norris, P. E. and S.S. Batie. (1987). "Virginia Farmers' Soil Conservation Decisions: An Application of Tobit Analysis", *Southern Journal of Agricultural Economics*, 19(1): 79-90.

Nunnally, J.C., and I.H. Bernstein, (1994). *Psychometric Theory* (3rd. Ed.). McGraw-Hill, New York.

Officer, R.R., and A.N., Halter (1968). "Utility Analysis in a Practical Setting", *American Journal of Agricultural Economics*, 50, 257-277.

Papadakis V. and P. Barwise. (1998). *Strategic Decisions*. Kluwer Academic Publishers.

Payne, J.W. (1997). "The Scarecrow's Search: A Cognitive Psychologist's Perspective on Organizational Decision Making", in: Shapira, Z. (Ed). *Organizational Decision Making*, Cambridge University Press, New York, 353-374.

Payne, J.W., D.J. Laughhann, R.L. Crum. (1980). "Translations of Gambles and Aspiration Effects in Risky Choice Behaviour", *Management Science*, 26, 1039-1060.

Pennings J.M.E. and A. Smidts. (2000). "Assessing the Construct Validity of Risk Attitude". *Management Science*, 46, 1337-1348.

Pennings J.M.E. and B. Wansink (2004). "Channel Contract Behaviour: The Role of Risk Attitudes, Risk Perceptions, and Channel Members' Market Structures", *Journal of Business*, 77(4), 697-723.

Pennings, J.M.E, B. Wansink, and M.T.G. Meulenberg (2002), "A Note on Modeling Consumer Reactions to a Crisis: The Case of the Madcow Disease," *International Journal of Research in Marketing*, 19 (1): 91-100.

Pennings J.M.E. and D.N. Kleinmuntz. (2005). "Validating Risk-Value Model Risk Preference Measures: En Experimental Study of Portfolio Managers", Working Paper, Dept. of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.

Pennings J.M.E. and Meulenberg, M.T.G. (1997). "Hedging Efficiency: A Futures Exchange Management Approach", *Journal of Futures Markets*, 17(5), 599-615.

Pennings J.M.E. and P. Garcia. (2001). "Measuring Producers' Risk Preferences: A Global Risk-Attitude Construct", *American Journal of Agricultural Economics*, 83, 993-1009.

Pennings J.M.E. and R.M. Leuthold, (2000). "The Role of Farmer's Behavioural Attitudes and Heterogeneity in Futures Contracts Usage", *American Journal of Agricultural Economics*, 82(4): 908-919.

Pennings, J.M.E. and A. Smidts. (2003). "The Shape of Utility Functions & Organizational Behaviour" *Management Sciences*, 11(2): 199-215.

Pennings, J.M.E. and P. Garcia (2005), "Predicting Strategic Decisions: What Can Utility Functions Tell Us?," Working paper Marketing & Decision Sciences Group, University of Illinois at Urbana-Champaign.

Peter, J.P. (1981). "Construct Validity: A Review of Basic Issues and Marketing Practice", *Journal of Marketing Research*, 18, 133-145.

Pliskin, J.S. and C.H. Jr., Beck, (1976). "A Health Index for Patient Selection: A Value Function Approach", *Management Science*, 22, 1009-1021.

Porter M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. The Free Press.

Porter M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*, The Free Press.

Pratt, J. W. (1964). "Risk Aversion in The Small and in The Large", *Econometrica*, 32, 122-136.

Quinn, J. B. (1980). *Strategies for Change – Logical Incrementalism*. Homewood Illinois, R. D. Irwin, Inc. Quinn, J. B., Mintzberg, H., and R.M., James, 1988). *The Strategy Process*, Prentice Hall, Englewood Cliffs, New Jersey.

Rabin, M. and R.H., Thalet. (2001). "Anomalies: Risk Aversion", *Journal of Economic Perspectives*, 15(1), 219-232. Rabin, M., (2000) "Risk Aversion and Expected-Utility Theory: A Calibration Theorem", *Econometrica*, 68(5): 1281-1292. Robinson, R. B., Jr. and J. A. II Pearce. (1984). "Research Thrusts in Small Firms Strategic Planning", *Academy of Management*, 9, 128-137.

Roe, B., Sporleder, T.L., and B. Belleville. (2004). "Hog Producer Preferences for Marketing Contract Attributes", *American Journal of Agricultural Economics*, 86(1), 115-123.

Roosen, J. and D.A. Henessy (2003). "Tests for the Role of Risk Aversion on Input Use", *American Journal of Agricultural Economics*, 85(1), 30-43.

Saha, A. (1993). "Expo-Power Utility: A Flexible Form for Absolute and Relative Risk Aversion", *American Journal of Agricultural Economics*, 75, 905-913.

Sarin R. K. and M. Weber (1993). "Effects of Ambiguity in Market Experiments", *Management Science*, 39, 603-615.

Sarin, R. K. and M. Weber. (1993). "Risk-value Models", *European Journal of Operational Research*, 70, 135-149.

Sarin, R.K. (1987), "Some Extensions of Luce's Measures of Risk", *Theory and Decision*, 22, 25-41.

Schoemaker, P.J.H. (1982). "The Expected Utility Model: Its Variants, Purposes, Evidence and

Limitations", *Journal of Economic Literature*, 20, 529-563.

Schoemaker, P.J.H. (1990). "Are Risk-Preferences Related Across Payoff Domains and Response Modes?", *Management Science*, 36, 1451-1463.

Schurr, P.H. "Effects of Gain and Loss Decision Frame on Risky Purchase Negotiations", *Journal of Applied Psychology*, 72(1987), 351-358.

Scott J.T. and C.B. Baker (1972). "A practical Way to Select An Optimum Farm Plan under Risk", *American Journal of Agricultural Economics*, 54, 657-660.

Shapira, Z. 1995. *Risk Taking: A Managerial Perspective*. Russell Sage, New York.

Shapira, Z. 1997. *Organizational Decision Making*. Cambridge University Press, New York.

Sherman, S.J. (1980). "On the Self-erasing Nature of Errors of Prediction. *Journal of Personality and Social Psychology*, 39, 211-221.

Shuman C. J. and J.A. Seeger. (1986). "The Theory and Practice of Strategic Management in Smaller Rapid Growth Firms", *American Journal of Small Business*, 11(1), 7-18.

Slovic, P. (1974). "Assessment of Risk Taking Behaviour", *Psychological Bulletin*, 61, 220-233.

Smidts, A. (1990). "Decision Making Under Risk", Ph.D. Thesis, Wageningen University, The Netherlands.

Smidts, A. (1997). "The Relationship Between Risk and Strength of Preference: A test of Intrinsic Risk Attitude", *Management Sciences*, 43(3):357-370.

Steenkamp, J-B. E. M. and H. C. M., van Trijp. (1991). "The Use of LISREL in Validating Marketing Constructs", *International Journal of Research in Marketing*, 8, 283-299.

Steiner, G. A. and J. B., Miner, (1977), *Management Policy and Strategy: Text, Readings, and Cases*. New York: MacMillan.

Stevens, S.S. (1975). *Psychometrics. Introduction to Its Perceptual, Neural, and Social Prospects*. New York.

Srivastava, R.K., T.A. Shervani, L. and Fahey (1998). "Market-based Assets and Shareholder Value: A Framework for Analysis", *Journal of Marketing*, 62, 2-18.

Stoll, H.R., R.E. Whaley. (1993). *Futures and Options: Theory and Applications*. South-Western Publishing Co, Cincinnati, Ohio.

Stone, E.R., J.F. Yates, and A.M. Parker (1994). "Risk Communication: Absolute versus Relative Expressions of Low-probability Risks", *Organizational Behaviour & Human Decision Processes* 60, 387-408.

Thornton, P.K. (1985). "Treatment of Risk in a Crop Protection Information System", *Journal of Agricultural Economics*, 36, 201-211.

Thurstone, L.L., and E., Chave. (1929). *The Measurement of Attitude*. Chicago: University of Chicago Press.

Torgerson W.S. (1958). *The Theory and Measurement of Scaling*. Wiley, New York.

Trimpop, R.M. 1994. *The Psychology of Risk Taking Behaviour*. New York: North-Holland Publishers & Co.

Tsiang, S.C. (1972). "The Rationale of the Mean-Standard Deviation Analysis, Skewness Prefer-

ence and Demand of Money”, *American Economic Review*, 64, 354-371.

Tufano, P. (1996). “Who Manages Risk? An Empirical Examination of Risk Management Practices in the Gold Mining Industry”, *Journal of Finance*, 51, 1097-1137.

Tversky A. (1967). “Additivity, Utility, and Subjective Probability”, *Journal of Mathematical Psychology*, 4, 175-202.

Tversky, A., D. Kahnemann. (1981). “The Framing of Decisions and the Rationality of Choice”, *Science*, 211, 453-458.

Wakker P.P. and D. Deneffe. (1996). “Eliciting von Neumann-Morgenstern Utilities When Probabilities are Distorted or Unknown”, *Management Science*, 42, 1131-1150.

Wang, H., Barney B.J., and Reuer J.J. (2003). “Stimulating Firm-Specific Investment through Risk Management”, *Long Range Planning*, 36, 49-59.

Weber, E.U. and R.A. Milliman. (1997). “Perceived Risk Attitudes: Relating Risk Perception to Risky Choice”, *Management Science*, 43, 123-144.

Weber, E.U., C. Hsee. (1998). “Cross-cultural Differences in Risk Perception, But Cross-cultural Similarities in Attitudes Toward Perceived Risk”. *Management Science*, 44, 1205-1217.

Webster, J. and J. Kennedy. (1975). “Measuring Farmer’s Trade-Offs Between Income and Focus Loss Income”, *American Journal of Agricultural Economics*, 57: 97-105.

Westgren R.E. (1999). “Delivering Food Safety, Food Quality, and Sustainable Production Practices: The Label Rouge Poultry System in France”, *American Journal of Agricultural Economics*, 81(5), 1107-1111.

Wind Y.J. (1982). *Product Policy: Concepts, Methods, and Strategy*. Addison-Welsey, Reading.

Zeuli, K.A. (1999). “New Risk Management Strategies for Agricultural Cooperatives”, *American Journal of Agricultural Economics*, 81(5), 1234-1239.

## Value Pricing Capabilities in Agribusiness

*Paul Ingenbleek, Gé B.C. Backus, and Theo M.M. Verhallen*

### **Affiliations**

Paul Ingenbleek is assistant professor of marketing, Wageningen University, and researcher at the Agricultural Economics Research Institute in The Hague, the Netherlands.

Gé B.C. Backus is researcher at the Agricultural Economics Research Institute in The Hague, the Netherlands.

Theo M.M. Verhallen is professor of marketing at Tilburg University, the Netherlands.

### **Correspondence**

Paul Ingenbleek, Wageningen University, Marketing and Consumer Behavior Group, Hollandseweg 1, 6706 KN Wageningen, the Netherlands, phone: +31 317 482 719, Fax: +31 317 484 361, e-mail: Paul.Ingenbleek@wur.nl.

### **Acknowledgements**

The authors thank Ruud Frambach for his helpful comments on an earlier draft of this paper, Menno Binnekamp, Benoit Gouhier, and Mathew Meulenberg for sharing their insights on topics discussed in the paper, and TransForum for funding this research.

## Abstract

Value pricing capabilities are under the surface of many developments in agribusiness, such as a transition of food supply chains to food demand chains, and a growing critique on the disproportional attention for costs in pricing issues. Value pricing refers to the degree to which the firm bases the price of a market offering on customer value information. Because price decisions are made in a complex organizational process, effective value pricing is not for granted: it is a capability that requires coordination and resources. Because value pricing capabilities enable firms to set coherent offerings in the market consisting of price and value, and because they enable the firm to determine what the customer is willing to pay, they are vital to the viability of the firm. Value pricing is also a promising price strategy for sustainability, because it doesn't share the disadvantages related to other price strategies that increase the consumer's willingness to pay. The concept of value pricing is complementary to traditional approaches that contribute to pricing in agricultural economics, i.e. transaction cost economics and agency theory. In contrast to these traditional approaches, value pricing pays respect to gaining rewards for value creation; it is more realistic with respect to pricing as it occurs in business practice (whereas its normative aspects need further development), and it is more basic in terms of peoples' cognitive numerical abilities. Value pricing capabilities hold important relevance for current structural changes that are taking place in the agribusiness environment. In particular, the creation of customer value changes the well-established roles of chain partners and therefore calls for a replacement of traditional price mechanisms by new ones based on value pricing. When managers are able to recognize these capabilities and they are supported with feedback on their functioning, they become able to strengthen their capabilities. This is not only beneficial to the firm itself, but also to its chain partners, the functioning of the economy in general and potentially to sustainable development. Given the current state of knowledge on value pricing capabilities, we propose directions for future research in which we extend both our knowledge of value pricing capabilities in general, and its contributions to sustainable agriculture.

## Introduction

Pricing is perhaps the most elaborated topic in marketing and management literature (Gijbrecchts 1992; Rao 1984; Tellis 1986). Considering that managers find pricing important (Hooley, West and Lynch, 1984; Myers, 1997; Samiee, 1987), that they find it difficult (Dolan and Simon, 1996), and that it is important to public policy and society (Grewal and Compeau, 1999), managers, policy makers, and academic researchers seem to have a common interest in the vast stream of pricing studies. Pricing is also an issue that increasingly appears in the discussions on how to increase sustainable development: development in which economic, ecological and socio-cultural issues (Profit-Planet-People) set out together in a process of continuous improvements (Brundtland et al. 1987; Serageldin 1996; Serageldin and Steer 1994). In many cases, an improvement of sustainability will lead to higher costs, because those market actors that are willing to exploit natural and human resources will be able to produce cheaper in the short-term than those that take care of these resources. Higher costs should in the end be covered by higher consumer prices.

In a position paper on marketing strategies for sustainability, Ingenbleek, Crul, Frambach, and Rietveld (2005) conclude that value strategies are an important avenue for improving sustainability in the market. In value strategies, firms set out to create superior benefits for their customers (Woodruff 1997). Firms that create superior customer value are more likely to invest in sustainable production. This will however only be the case if the creation of customer value yields a position of competitive advantage that is sufficiently profitable. Without well-developed value pricing capabilities this is unlikely. Pricing textbooks agree that value pricing can be seen as an extension of value strategies in which superior benefits for consumers are created: it expresses those benefits in the price, thus making sure that the company will be rewarded for its efforts (e.g. Anderson and Narus 1999; Monroe 2003; Nagle and Holden 1995).

If sustainability is to be achieved within the boundaries of a free market economy, attention for value pricing capabilities seems inevitable. To this respect, three major questions should be answered: (1) given the current state of the literature about the topic: what are value pricing capabilities? (2) Why are value pricing capabilities important for sustainability? In other words: which other strategic options may cover costs for sustainable production in consumer prices? (3) How do value pricing capabilities relate to the theory and practice of agribusiness? We will clarify how value pricing relates to well-established theoretical approaches to pricing in agribusiness, such as transaction cost theory and agency theory.

In the remainder of this article, we will first provide a state-of-the-art summary of the literature that supports the concept of value pricing capabilities. Next, we identify the different

possibilities of charging higher prices for sustainability. Subsequently, we discuss traditional approaches to pricing in agricultural economics and explain how the two approaches relate and differ from each other. In this section we will also identify the potential of value pricing capabilities in agribusiness. This is followed by a research agenda and implications.

## Value pricing capabilities: an overview

The concept of value pricing stems from consumer price perception literature. In this section we will first provide the background and a definition of this concept. Because value pricing refers to an organizational process that occurs behind the walls of a firm, a better insight in the topic can be obtained from research on pricing practices. The contributions to pricing practices research can be divided in four groups that will be discussed subsequently: (1) those that developed cost-principles theory, (2) those that originate from marketing strategy, (3) those that examine pricing practice from the perspective of the behavioral theory of the firm, and (4) those that follow a perspective from the resource-based view of the firm.

### *The concept of value pricing*

With respect to the price decision for a product that offers superior value, scholars generally agree on the basic importance of customer value information (Anderson and Narus 1999; Monroe 2003; Nagle and Holden 1995). Such claims are essentially based on the implications of studies that focus on the price perception of customers. This stream of research started in the 1970s with the works of Monroe (1971; 1973) and has grown into an advanced body of knowledge (see for example Gijbrecchts 1992; Monroe 2003). These studies make clear, that subjective perceptions have an important impact on how consumers respond to prices. Despite their strong impact on consumer behavior, pricing research based on mainstream economics often doesn't account for these psychological effects (Monroe 2003).

In particular, the concept of value pricing is based on the finding that benefits perceived by customers upon acceptance of the market offering (which is in fact value according to the definition of Hunt 2000), such as quality, have an important impact on the consumers' subjective willingness to pay (see for reviews: Zeithaml 1988; Rao and Monroe 1989). Customers generally evaluate these benefits by comparing the offering to alternatives (Monroe 2003; Tversky & Kahnemann 1991) that they find in the assortment or that they remember. Subsequently, customers trade-off perceived benefits against price to determine whether the benefits offered are worth the price (Monroe 2003; Zeithaml 1988).

These studies on consumer behavior make clear that firms that are able to understand what their customers perceive as beneficial have an important advantage over their competitors. First, because they are able to express perceived benefits in the price, they are able to put a coherent offering in the market of which the price matches the value in the customer's perception. When customers believe that they pay a good price for the value that they obtain, they

are likely to purchase the product. This is not necessarily a low price, because consumers also use price as a signal of quality (Rao and Monroe 1989). Second, because these firms understand how much the value that they offer to their customers is actually worth, these firms are probably able to charge higher prices. In short, understanding customers' value perceptions leads to better price decisions because they increase both sales and profit margins. These ideas are confirmed in empirical studies on new product price decisions (Ingenbleek 2002; Ingenbleek, Debruyne, Frambach, and Verhallen 2003).

Given that price decisions as they take place within organizations are based on the information that is available, value pricing in firm practice is in fact decision-making based on customer value information. Value pricing requires firms to use information that enables them to assess the relative advantages of their offering and how these will be traded-off against the price (that has yet to be determined). Value pricing is therefore defined as the extent to which a firm bases the price of a market offering on customer value information (Ingenbleek, Frambach, and Verhallen 2005). This information may be market research, insights from sales people that are communicated within the organization, reports from customer visits or complaints, etc. Because firms may differ in the degree to which this type of information is available to them (Kohli and Jaworski 1990), value pricing is not for granted. One firm may be more capable of value pricing than another. Hence we speak of value pricing as a capability.

### *Cost-principles theory*

Derived from insights in price perception literature, the concept of value pricing is relatively recent. Related concepts are however present in literature much longer. The "discovery" of pricing practice can be attributed to Robert Hall and Charles Hitch. Just before the Second World War, these young and ambitious economists believed they had made an important discovery. Hall and Hitch (1939, p. 12) identified the difference between economic theory and pricing practice, because their interviews with managers suggested "a mode of entrepreneurial behavior which current economic doctrine tends to ignore." On the basis of interviews in 38 firms, Hall and Hitch (1939) discovered that pricing in firm practice deviated from pricing theory. In particular, they found that firms assessed costs, by computing variable costs and making an assessment of the amount that was necessary to cover fixed costs. Hence, Hall and Hitch (1939) speak of the full cost principle. Next, firms add a profit margin to the assessed amount. The firms that apply this procedure most rigidly determine the profit margin in complete blindness, while those that are less rigid, use market information to assess which margin is feasible. This practice is well-known in literature as cost-based pricing and is condemned by both marketers and economists because the practice is assumed to be unprofitable (e.g. Cressman 1999; Dean 1950; Nagle and Holden 1995).

After World War II, cost-principles theory became a central argument in heated discussions on the assumptions and methods of economics, also known as "the marginalist controversy" (see for reviews: Lee, 1984; Mongin, 1992; 1997, p. 558). In this discussion, Friedman (1953) stated for example that asking managers to explain their pricing behavior was as useful as asking young people to account for their long life. By the end of the debate, neopositive economics turned out to become the basis for what can be called mainstream pricing literature. Mainstream pricing literature typically searches for optimum price levels under predetermined circumstances. The price strategies of firms that are generally presented in marketing textbooks are in most cases based on these studies (see for overviews: Noble and Gruca 1999a; Tellis 1986). Hall and Hitch's (1939) article, in the end, had little or no impact on this stream of pricing research. As far as we were able to establish, Hall and Hitch never published on the topic again.<sup>10</sup>

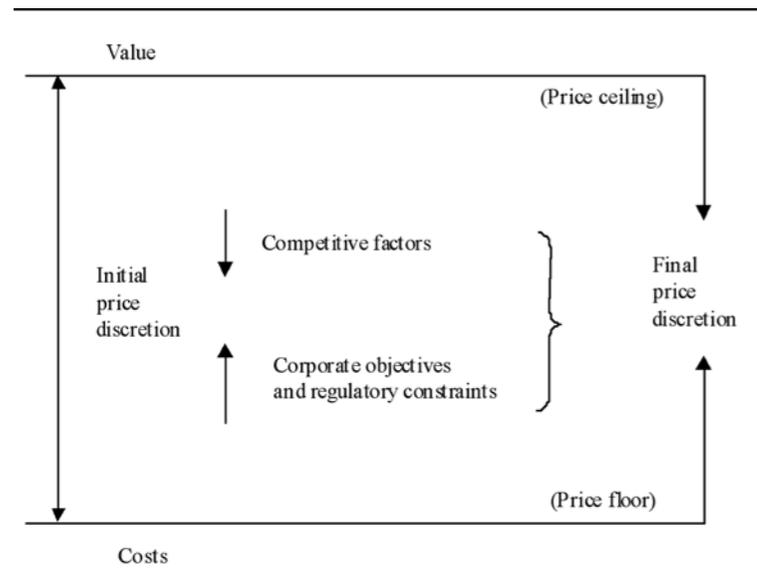
The publication of Hall and Hitch's (1939) article also generated more empirical research on pricing practices. These contributions emphasized that managers may use different types of information, including costs information and market information (Edwards 1952; Fog 1960; Foxall 1972; Nimer 1971; Pearce 1956; Shipley 1983; Skinner 1970; Wentz 1966). This information may be distributed in both formal and informal ways (Edwards 1952; Pearce 1956), and in a cross-functional organizational process (Edwards 1952; Pearce 1956; Sizer 1966).

In particular, Edwards (1952) and Pearce (1956) concluded that managers may be likely to use cost information, but in the end they appear to search for "what the market can bear" (Pearce 1956, p. 114), or "the customer's willingness to pay" (Edwards 1952, p. 307). This way, these authors described what we now know as the price discretion (see Figure 1). The price discretion consists of a price floor (costs) and a price ceiling (customer value) that shape the natural boundaries that managers are faced with in a price decision.

---

<sup>10</sup> In fact, both of them moved to slightly different fields. Hall became a typical Keynesian economist and was for several decades the senior advisor of the British government in economic affairs (Jones 1994). Hitch returned to the US, where he served among others as an operations researcher in business, as president of the Operations Research Society of America, and as president of the University of California. When Hitch was asked in the 1960s whether he was "the Hitch of Hall and Hitch" he responded: "Tell him that was in a previous incarnation." (Enthoven 1995).

FIGURE 1: The price discretion



Based on Monroe (2003)

Importantly, these studies give ground for the concept of value pricing, by suggesting that value pricing is the theoretical opposite of cost-based pricing. They also suggest that if cost-based pricing is something of degree, value pricing is also something of degree. In business practice, managers may use both types of information simultaneously and to different degrees in price decisions because both types of information are gathered by and distributed within the organization in formal and informal ways. Once the controversy that Hall and Hitch started was settled, attention for cost-principles theory started to fade. It was picked up by researchers who aimed to explain phenomena that neo-classical economics couldn't explain, such as price stickiness (cf. Blinder, Canneti, Lebow and Rudd 1998) and it became an integrated part of the behavioral theory of the firm (Cyert and March 1963).

### **Marketing strategy**

The dominant role of price in mainstream economic theory, challenged Udell (1964) to show that price is not that dominant in marketing practice. Using a survey approach, he examined

the perceived relative importance of marketing mix elements. Many studies in Udell's spirit have been carried out, examining the relative importance of price in the marketing mix (Myers 1997; Pass 1971; Robicheaux 1975; Samiee 1987; Udell 1968; 1972). Overall, these studies suggest that price is generally perceived as the second most important element after product or product quality.<sup>11</sup> In our modern marketing language, we would say that managers see the drivers of customer value generally as most important, followed by price, which enables them to take the rewards for creating value (cf. Nagle and Holden 1995).

An important study to this respect is Coe's (1990) longitudinal study of pricing practices. Throughout the 1980s she measured at three points in time, several variables of firms' marketing strategies. The major conclusion that she drew from these data is that during the 1980s innovation came to a halt, and meanwhile cost-based pricing was on the rise. In other words: her findings suggest that firms that stop creating customer value will increasingly focus on costs rather than value information in their pricing processes.

Many of these surveys also focused on pricing methods, i.e. the explicit pricing practice by which firms arrive at price decisions (Abratt and Pitt 1985; Antilla and Möller 2000; Coe 1990; Frambach, Nijssen, and Van Heddegem 1997; Hooley, West and Lynch 1981; Noble and Gruca 1999a; Piercy 1981; Tzokas, Hart, Argouslidis and Saren 2000; Udell 1972). In addition to cost-based pricing, managers often also could choose options such as competition-based pricing and demand- or value-based pricing in the questionnaires used by these surveys. Despite the widespread belief that that cost-based pricing is the most widely used practice (e.g. Dean 1950; Noble and Gruca 1999a), there is not yet a reliable estimate of the relative proportion of firms that in price decisions are guided by information on costs rather than market information.

### **The behavioral theory of the firm**

In an attempt to theorize on the organizational behaviors of firms' managers, Cyert and March (1963) developed the behavioral theory of the firm. Cyert and March (1963) see the firm as a coalition of stakeholders that negotiate about objectives. Hence, these objectives are satisfying rather than maximizing in nature. Over time, simplified rules of thumb emerge in the firm that may yield satisfying results. According to the behavioral theory of the firm, (cost-based) pricing practices are such routines.

With this theory in mind, pricing researchers started to examine in more detail the organizational process by which prices are set in firms. A number of detailed case studies showed the im-

<sup>11</sup> Only Robicheaux (1975) finds price to be the most important element, which he explains from the high inflation and oil crisis of those days.

portance of the organizational process in price and planning decisions. Whereas Hague (1971) exemplifies the characteristics of the behavioral theory of the firm in organizational pricing processes, others map organizational price decision processes in detailed flow charts (Capon and Hulbert 1975; Capon, Farley and Hulbert 1975; Farley, Howard, and Hulbert 1971; Farley, Hulbert, and Weinstein 1980). These studies make clear that the pricing process in organizational practice is highly complex and thus support the idea that value pricing is a capability.

### ***Resource-based theory of the firm***

An important theoretical contribution is the introduction of pricing to the resource-based view of the firm. The basic writings are to this respect provided by Dutta et al. (2001) and Dutta, Zbaracki, and Bergen (2003). Also Tzokas et al (2000) and Vorhies and Morgan (2005) touch on the topic. The resource-based view of the firm suggests among others that performance differences between firms are caused by the fact that firms have different resource-stocks (including physical assets, but also non-physical assets like competencies, skills, and knowledge). In order to outperform competitors, firms should struggle for a superior resource stock and develop competencies that enable them to create superior value from the deployment of these resources (e.g. Dierckx and Cool 1989; Hamel and Prahalad 1994; Wernerfelt 1984).

By studying pricing from a resource-based view, Dutta et al. (2001) actually follow the development of the behavioral theory of the firm into organizational learning and competence-based views. It acknowledges that pricing isn't a costless activity, but that it requires resources such as information, skills and knowledge. Because these resources are used in an organizational process that leads to a price decision, we speak of a pricing capability.<sup>12</sup> It suggests that firms should invest in their pricing capabilities, and that firms may outperform competitors because they have stronger pricing capabilities. Therefore, firms should strategically distribute their resources in processes of value creation and pricing (Dutta, Zbaracki, and Bergen 2003).

In order to understand how value pricing capabilities can be improved, it is important to understand which resources are used in a pricing process that pays respect to customer value information. Following the rationale that value information flows from the network that surrounds the firm, Ingenbleek (2004) theorizes on the desired chain relationships for value pricing. A typical resource that is used by a value pricing capability is a market orientation. Firms with market-oriented cultures are found to make more use of customer value information in new product price decisions (Ingenbleek, Frambach, and Verhallen 2004; 2005). This study confirms what many studies on market orientation have found before, i.e. that market-oriented firms create more customer value (Kirca, Jayachandran, and Bearden 2005). However, it makes

<sup>12</sup> See Sanchez, Heene, and Thomas (1996) for the terminology in the resource-based theory of the firm.

clear that creating value accounts only for approximately half of the performance, the other half stems from the fact that customer value information is transmitted from the process of value creation to the pricing process, resulting in a higher degree of value pricing.

In the discussion section of their article Dutta, Zbaracki, and Bergen (2003, p. 629) suggest that the development of pricing capabilities is not only beneficial to the individual firm, but also to the economy and society in general: 'Managers in a firm without effective pricing processes may be unable to set prices that reflect the wishes of their customers, so the customers may misuse resources. As such effects ripple through a supply chain or a market sector, society may be worse off because resources are used inefficiently.' Value pricing capabilities are therefore not only crucial to the viability of the individual business, but play a central role in the functioning of the economy as they ensure that rewards for allocating resources flow where they should flow.

### ***Summary***

Value pricing refers to the degree to which the firm bases the price of a market offering on customer value information. Because price decisions are made in a complex organizational process, value pricing can not be taken for granted: it is a capability that requires coordination and resources. The concept of value pricing stems from research on consumer price perceptions. Its organizational context becomes clearer from studies on cost-principles theory, marketing strategy, and the behavioral and resource-based theories of the firm. Because value pricing capabilities enable firms to set coherent offerings in the market consisting of price and value, and because they enable the firm to earn what the customer is willing to pay, they are vital to the viability of the firm. For the same reason they play a central role in the functioning of the economy in general.

## Price strategies for sustainability

A price strategy is a means by which a pricing objective can be achieved in the market (Noble and Gruca 1999a). A price strategy for sustainability thus is a way by which the pricing objective of covering increased costs for sustainability, can be achieved in the market by using price as a marketing instrument. It enables firms to set prices in such a way that consumers are willing to pay a higher price, that will cover the additional costs of sustainable production as compared to –“unsustainable”, or at least, “less sustainable”– mainstream production. We distinguish four different price strategies for sustainability: (1) “The price is unfair!”, (2) Replacing unsustainable substitutes, (3) Consumer donations, and (4) Value pricing. Each of these strategies builds on specific consumer price perceptions and may be feasible under specific conditions. We discuss them below in subsequent order.

### *“The price is unfair!”*

Consumers form price perceptions by comparing newly encountered prices with a reference price (Monroe 2003). Reference prices may be internal and external (Monroe 2003). Using the external reference price, the consumer compares a newly encountered price with an existing alternative on the shelves. An internal reference price is retrieved from the memory of the consumer. An internal reference price is not a single number, but a range of prices that are acceptable to the consumer when he purchases a certain product (Monroe 2003). Each time the consumer encounters a new price, he compares the price with the range of acceptable prices in memory. By doing so, (1) the range of acceptable prices is further refined, (2) the consumer judges how high the price is for the product, and (3) the consumer judges how fair the price is (Monroe 2003).

Literature on fair pricing has generally examined the question how consumers perceive and respond to prices that they consider too high to be fair (Xia, Monroe, and Cox 2004). It has for example been found that prices that have “precise” endings like 23.37 are more frequently perceived as fair than round endings (Monroe 2003). In the case of a price strategy for sustainability, price fairness perceptions are used in a different way: organizations that put sustainable products on the market communicate to consumers that because they cover the costs of sustainability, their price is “fair” whereas the prices of mainstream products are “unfair”. Examples of products that are often priced according to this strategy are organic and Fair Trade products.

“The price is unfair!”-strategies are typically related to responsible marketing strategies, in

which suppliers differentiate their products exclusively on the basis of sustainability (see Ingenbleek, Crul, Frambach, and Rietveld 2005). The most important merit of these strategies is their mirror function: they show that sustainable production is possible and that there is a segment of consumers who believe they are charged a fair price and are willing to pay that price. In general these market segments are however relatively small. The fact that “The price is unfair!”-strategy contradicts with the price knowledge of many consumers, and that it probably takes high involvement with sustainability issues to change these well-established price ranges in the memory (Monroe 2003), may be an important reason why responsible marketing strategies don’t seem to attract large market segments. In addition: consumers consider unfair prices to their own disadvantage worse than when the disadvantage is for someone else (Oliver and Swan 1989).

Supply chains that pursue responsible marketing strategies and price their products according to a “The price is unfair!”-strategy are likely to engage in cost-based pricing practices. They build on a joint understanding that sustainability should be improved and that consumers can be asked to pay for it. This justifies a consumer price that covers all the costs necessary for sustainable production plus a small but fair profit margin. An example of such a cost-based price mechanism for a supply chain is Hoste’s (2001) model for organic pork.

### *Replacing unsustainable substitutes*

A second price strategy for sustainability is simply to remove products from the assortment that are considered unsustainable. Although this may not seem a price strategy at first sight, it has an important pricing condition. The best known and probably most successful example of removing products that were considered not sustainable is the removal of battery eggs from the table egg shelves in the supermarkets. All supermarkets in The Netherlands decided to remove the battery eggs from their assortments in January 2004, many years before the European Community banned battery eggs.

If one or more supermarkets would have feared a loss from this decision, such a joint operation would have been highly unlikely. The reason they did not withdraw is that cross-price elasticity (Nagle and Holden 1995) of eggs is relatively low. In other words: if consumers experience a price increase of eggs, the chance that they switch to other product categories is relatively small. If the same consumer would have experienced comparable price increase in pork, he might have switched to beef, chicken or any other substitute. Consumer price sensitivity thus provides the basis for banning undesired products from the shelves. It also explains why initiatives that aim to repeat the success of free range eggs in other product categories may be doomed to fail.

### Consumer donations

The purchase of food is typically situational dependent (Meulenbergh 2003) and hence perceptions of price and value differ between different purchase situations. Changing the situation could therefore help to change the customer's perception of "what it's worth". Donations for sustainable food production build on this idea. In a "normal" economic transaction, the customer pays a monetary price in exchange for the value that he obtains. If the value that is obtained doesn't satisfy any personal wants or needs but is beneficial to the society as a whole, we speak of societal value rather than customer value (Ingenbleek 2003). The reward for societal value should come from payments to the government such as taxation, and/or from donations. Consumer donations as a price strategy for sustainability, thus comes down to approaching the consumer in different ways rather than charging the consumer a higher price. During the regular purchases, that often occur under time pressure, the consumer is asked to make a donation for sustainable production. An important advantage of the change of situation is that the consumer may face less time pressure than during food purchases. A well-known example of this strategy is the "adopt a chicken" campaign for organic eggs: consumers are asked to donate a certain amount of money for "their" chicken and in exchange they can pick up the chicken's eggs from time to time at a nearby store. Other types of donations may be directly related to an economic transaction in which firms ask consumers to donate money for a nonprofit objective in addition to payments for the regular price (Lichtenstein, Drumwright, and Braig 2004).

### Value pricing

Value pricing can also be considered a price strategy for sustainability. Ingenbleek, Crul, Frambach and Rietveld (2005) see value creation as a marketing strategy with a potentially large impact on sustainable development. Firms that create superior customer value may experience several benefits from including sustainability attributes in their value creation. It protects their brand and store images, for example from negative publicity and in some market segments it may even strengthen these images. Value pricing can be seen as an extension of value strategy, because it ensures that firms are rewarded for creating value. In particular, value pricing capabilities enable firms to assess what a market offering is worth to the customer. Because profit margins are potentially larger, additional costs for sustainable production are more likely to be considered acceptable in firms that are capable of value pricing than in firms that are not capable of value pricing.

Table 1: Price strategies for sustainability

Price strategy	Consumer price effect	Conditions	Examples
The price is unfair!	Price fairness	Consumer involvement	Fair Trade, organic
Replacing unsustainable substitutes	Price sensitivity	Collaboration between key competitors in categories with none or few substitutes	Free-range eggs
Donation	Change of situation.	Creation of societal value	Organic eggs
Value pricing	Price quality comparison	Creation of customer value	Dutch veal

# Value pricing in agribusiness theory and practice

Given the limitations of other marketing and price strategies, value strategies in combination with well-developed value pricing capabilities promise a fruitful avenue to improve sustainable development. To determine how value pricing capabilities are applicable to agribusiness, we will first briefly discuss the most important theories that are used to solve pricing issues in agricultural economics (transaction cost economics and agency theory). Next, we discuss how value pricing capabilities relate to this theory. Finally, we discuss how value pricing capabilities are becoming increasingly important in agribusiness.

## *Traditional approaches to pricing in agricultural economics*

Agricultural economics traditionally deal with pricing issues from the perspective of transaction cost economics and/or agency theory.

The concept of 'transaction cost' was first suggested by Coase (1937). Transaction cost implies that there are costs to using the market mechanism, including costs for information search, negotiation, monitoring and enforcement. The concepts of transaction cost economics were developed by Williamson (1979). Transaction cost economics examine and predict how, given the presence of bounded rationality and opportunism, organizations choose governance structures in order to minimize transaction cost. The choice of an appropriate governance structure depends on the transaction characteristics, differing in the presence of asset specificity, uncertainty about other parties' actions, frequency of transactions, and the complexity of the exchange arrangement.

Transaction cost economics provide a useful conceptual framework for analyzing the determinants of supply chain structure in relation to quality issues, this being a crucial source of uncertainty in transactions. Transaction cost economics predicts that vertical coordination is more likely to be observed when the level of uncertainty is high, including informational uncertainty when one party has information that the other lacks (information asymmetry). When information asymmetry exists, buyers may be unwilling to pay high prices for food products given their uncertainty about quality. Usually sellers have more information about the true quality attributes of the product than buyers, and the information asymmetry between sellers and buyers complicates the buyer's problem of identifying quality (Venturini and King 2005).

Agency Theory focuses on individuals with conflicting objectives, whom all contribute to a production process. Principal agent models deal with the design of incentive systems that help

align the interest of agents and principals. The principal hires an agent, who contributes to the production process. It is costly for the principal to observe and control that effort. The inherent risk of agricultural production further complicates the problem. Even if product quality can be assessed at a reasonable cost, it may be difficult to determine whether quality problems are due to lack of care and effort by the primary producer or to factors beyond his control. This is the basis for the moral hazard and risk sharing issues that have been a focus for the literature on contracts and the provision of incentives (Otsuka, Chuma, and Hayami 1992; Salanié 1997; Prendergast 1999; Bolton and Dewatripont 2005).

A variety of incentive mechanisms for addressing these agency problems have been proposed, analyzed, and implemented. Quality premiums and discounts have long been used by grain traders, food processors, and livestock slaughter plants to provide incentives for key product attributes. Several recent studies have focused on alternative designs for premium/discount schedules (e.g., Chalfant et al. 1999; Feuz 1999).

Principal-agent models are relevant when supply chain leaders work with chain partners to deliver high quality products to their consumers as efficiently as possible. The principal has nearly all the bargaining power in the typical principal-agent model, and the agent's compensation equals the reservation price that defines the participation constraint. The distribution of returns in a chain is influenced by the agents' opportunities in competing chains.

In conclusion, the emphasis of both Transaction Cost Economics and Agency Theory on efficiency provides limited insights on the distribution of revenues and costs among chain participants. But they provide useful insights and offer tools for designing new (incentive) mechanisms.

## *A comparison of traditional approaches with value pricing capabilities*

Comparing these traditional approaches to pricing issues in agricultural economics with the concept of value pricing capabilities, we can distinguish three important differences: (1) the extent to which the theory pays respect to efficiency and effectiveness, (2) the type of numerical abilities that are required when the theory is put to practice, and (3) the normative and descriptive merits of the theories.

Efficiency and effectiveness. Value pricing is fundamentally different from traditional approaches to pricing in that it focuses on effectiveness, rather than efficiency. In other words: value pricing capabilities are relevant when new value is created, a situation for which traditional approaches do not specifically account (Hunt 2000). Vice versa, value pricing capabilities may help to turn value into profit, but they don't stimulate firms to produce and exchange the value as efficiently as possible. This is where the traditional approaches to pricing offer an ad-

vanced frame of thinking. Stated simply: value pricing is fundamental when new value is to be created because understanding “what it’s worth” may make a huge difference. Subsequently, the new value should be as efficiently produced and exchanged as possible. Here, the traditional approaches can be helpful.

Estimation and calculation. Although not yet examined in literature, it seems likely that engaging in value pricing requires different numerical abilities than applying traditional approaches to pricing. Numerical cognition distinguishes calculation abilities from core numerical abilities (Dehaene 1992; Feigenson, Dehaene, and Spelke 2004). Calculation abilities refer to reading, writing, producing, and comprehending numbers (Deloche and Seron 1987). They deal with sophisticated numerical concepts that are uniquely human and that should be learned over time (Feigenson, Dehaene, and Spelke 2004). Calculation abilities will therefore help managers to develop and perform calculative procedures that are prescribed by traditional pricing theories. Core numerical abilities reside at a deeper level in human minds than calculative abilities. They provide a basis for humans to develop their calculation abilities and they are throughout evolution inherited from pre-human ancestors (Feigenson, Dehaene, and Spelke 2004). The ability that is most relevant to value pricing is approximate estimation (Dehaene 1992). In approximate estimation people access and manipulate a mental model of approximate quantities similar to a mental “number line” (Dehaene 1992). In order to estimate what a product is worth to the customer, managers generally lack objective numerical information about the customer’s value perception. As a consequence, they have no other option than to rely on their core numerical ability of approximate estimation.

Normative and descriptive. A third important difference between value pricing capabilities and traditional approaches to pricing is that value pricing capabilities and the theories that relate to it, much better describe pricing as it occurs in business practice. Oxenfeldt (1973, p. 48) was actually the first to speak literally of a “gap between pricing theory and application.” In particular, Oxenfeldt brought pricing as an organizational decision process to attention. He claimed that the practice of such an organizational process is far more complex than the problems described in mainstream academic pricing literature. After him, several others repeated this argument about the complexity (Bonoma, Crittenden, and Dolan, 1988; Diamantopoulos 1991; Gijsbrechts 1993).

Many authors attribute the gap between pricing theory and practice for the greater part to economic theory, which they blame for having a lack of realism (Hall and Hitch, 1939; Monroe and Della Bitta, 1978; Monroe and Mazumdar, 1988; Diamantopoulos, 1991). However, as Nagle (1984, p. 53) points out: “Yet, if one approaches economics expecting too much, one may well come away with too little. Economic models are not designed to describe realistically the way firms make price decisions.” In other words: traditional approaches to pricing provide

normative statements for specific situations, and were never developed as descriptive theories. The concept of value pricing capabilities stems from descriptive theories. Although it has no strong tradition in developing normative statements, it does provide a basis to do so. In fact, one study has been published providing normative statements on value pricing (Ingenbleek, Debruyne, Frambach, and Verhallen 2003).

#### Value pricing in agribusiness practice

In the context of agribusiness, value pricing capabilities received, so far, scant attention. Consistent with important developments that are going on in agribusiness (see for example Boehlje 1999), some conceptual and managerial publications have initiated this field (Ingenbleek 2003; 2005; Ingenbleek and De Vlieger 2004).

It should be noted that in order to develop and use value pricing capabilities, firms need some pricing authority. This doesn’t necessarily mean that firms determine prices that others pay, but it suggests that insights that emerge in the firm have the potential to influence prices, for example through negotiations about price levels, conditions of payment or price mechanisms by which prices are set. Some actors in agribusiness have very little influence on prices. The actor with the least influence is the consumer, who is generally confronted with a price tag on which no negotiations are possible. Similarly, individual farmers have little or no influence on prices, because the price negotiations –or, more frequently, the negotiations on price mechanisms that underlie these prices– are generally taken care of on their behalf by representative organizations.

Value pricing capabilities are therefore in the first place of importance for the larger chain actors, especially those that obtained powerful positions within their chains (the so called “chain masters”). In fact, their powerful positions are based on the customer value they create. Following the rationales of the resource-based view of the firm, these firms have unique resources that produce unique value, which makes them irreplaceable. Value pricing capabilities work out in two directions in these firms (Ingenbleek and De Vlieger 2004): they help to gain rewards from downstream actors (generally retailers or consumers) and they make sure that unique value suppliers upstream are rewarded in such a way that relationships are strengthened and supply is secured. Using examples of two (imaginary) companies, Ingenbleek and De Vlieger (2004) outline that these upstream and downstream value pricing capabilities are strongly related. Only if the firm understands what their offerings are worth to downstream partners and they manage to capture a fair reward for the value they deliver, they are able to pass on the rewards to suppliers of unique value upstream in the supply chain.

This line of reasoning also provides a basis for sharing costs and rewards in supply chains. Ingenbleek (2005) argues that issues regarding sharing financial rewards in supply chains should

be seen from a dual process of competition. Firms compete both with their chain on a consumer market, as well as with (potential) competitors for their position within the chain. The reward for the value that the chain as a whole delivers to the consumer can be shared by chain partners on the basis of their uniqueness relative to their (potential) competitors. This will be the most beneficial procedure for the competitive position of the chain as a whole, because it motivates chain partners to continuously improve their resources to create new value and to improve efficiency. In agribusiness practice, reward systems based on these rationales seem on the rise. Such systems might include price premiums, profit sharing, minimum pricing arrangements, or frame-contracts (Boehlje 1999). These systems often include rewards for risks, because if a supply chain actor is willing and able to take the risks regarding issues like food safety and perishability, this is often perceived as highly valuable by subsequent chain actors.

Because of structural changes that take place in the agribusiness environment, value pricing capabilities are becoming more important. Increasingly, the conflicts encountered with rigid incentive systems that do not adjust with changing economic conditions are likely to result in the development of more flexible incentive systems, such as contribution based percentage sharing of final product gross revenue (Boehlje 1999). An example was the replacement of fruits and vegetable auctions in 1996. Due to increased competitive pressure among retailers and the growing need to create more value in the fruits and vegetables assortments, the auction system was no longer considered efficient. The most dramatic change is probably that product differentiation (which is in fact the creation of new customer value) is on the rise in most agricultural sectors. The creation of customer value is to this respect no longer limited to those chain actors that traditionally have played this role, such as large food processing companies, but is increasingly assumed by other chain actors such as farmers. To this respect one may think of new or improved types of fruits, vegetables and meat, either or not supported by a specific region of origin.

Much of the agricultural production sector has focused on commodity products in the past and these commodity products are typically produced in large volumes by numerous producers in an increasing number of geographic locations in the world. Consequently, margins in commodity production are under constant pressure because of market forces that encourage increased production when prices and margins increase even slightly. In contrast, differentiated products offer unique value that can't be produced by everyone. As a consequence, the creation of customer value requires price mechanisms that respect the value. Otherwise the creation of value will not result in an increase of profit margins. This requires that well-established, traditional price mechanisms are replaced by new ones that are based on value pricing capabilities (Ingenbleek 2003). The actors that create new value, as well as their chain partners who wish to purchase it, should recognize that new value comes with new price authority (or increased market power), and thus requires development of value pricing capabilities.

## Conclusion and implications

This paper focused on three questions: (1) what are value pricing capabilities? (2) Why are value pricing capabilities important for sustainability? And (3) how do they relate to the theory and practice of agribusiness?

Value pricing refers to the degree to which the firm bases the price of a market offering on customer value information. Because price decisions are made in a complex organizational process, value pricing is not to be taken for granted: it is a capability that requires coordination and resources. Because value pricing capabilities enable firms to set coherent offerings in the market consisting of price and value, and because they enable the firm what the customer is willing to pay, they are vital to the viability of the firm. For the same reason they play a central role in the functioning of the economy in general.

Value pricing is also a price strategy for sustainability. To this respect it is promising, because it doesn't have the disadvantages related to other strategies. A price strategy based on price fairness perceptions of consumers faces the problem that it should change the well-established price perceptions in the memories of these consumers. Excluding less-sustainable products from the assortment is a viable strategy only if cross-price elasticity with other product categories is very low. Donations can't be expected from consumers for every product, but nevertheless, consumer donations for societal value is a topic that could be further explored.

The concept of value pricing –as well as the theories to which it relates (price perception theory, cost-principles theory, marketing strategy, the behavioral and the resource-based views of the firm)– is complementary to traditional approaches to pricing in agricultural economics, i.e. transaction cost economics and agency theory. In contrast to these traditional approaches, value pricing implies gaining rewards for value creation; it is more realistic with respect to pricing as this occurs in business practice (whereas its normative aspects need further development); and it is more basic in terms of peoples' cognitive numerical abilities. Value pricing capabilities hold important relevance for current structural changes in the agribusiness environment. In particular, the creation of customer value in subsequent stages in the supply chain calls for upstream and downstream value pricing capabilities. The creation of customer value changes the well-established roles of chain partners and therefore also often calls for a replacement of traditional price mechanisms by new ones based on value pricing.

## *Implications*

It has become clear that value pricing capabilities are under the surface of many developments in agribusiness. When managers are able to recognize them and are supported with knowledge on the functioning of these capabilities, they become able to strengthen them. This is not only beneficial to the firm itself, but also to its chain partners and the functioning of the economy in general. If the aim of public policy is therefore to stimulate economic growth, it should pay attention to the development of knowledge on the subject and increase of awareness of value pricing capabilities.

If the objectives of public policy are different from or broader than economic growth alone, a better understanding of value pricing capabilities may help public policy to guide development in the desired directions. After all, value pricing determines the rewards that firms receive in return for their investments in the creation of customer value. In particular, as it comes to strengthening sustainable development, Ingenbleek, Crul, Frambach, and Rietveld (2005) draw the implications for supporting value strategies that are –when accompanied by investments in sustainability– a promising avenue. In this paper, we extended this line of thinking suggesting that it also provides the most likely possibility of charging higher prices to consumers (which seems inevitable for many improvements of sustainability). The development and use of value pricing capabilities is then a necessary condition for sustainable development through value strategies. Because sustainability attributes are probably considered secondary in the valuable market offerings, firms will invest only in sustainability if their margins are sufficiently high. This places value pricing capabilities in a central position of sustainable development with none or limited government intervention in the economy.

## **Research agenda**

Although our knowledge on value pricing from the perspective of consumer price perceptions is relatively well-developed in a mature stream of research, we know little about the functioning of value pricing within businesses. On one hand, there has been substantial attention for the creation of customer value, on the other hand there is an abundance of studies on pricing from traditional perspectives. Neither of these provide insight in how rewards for creating customer value can be obtained. This type of knowledge is however essential to successful value strategies that provide a promising direction for sustainable development. The disproportional attention for costs in pricing issues, and a transition of food supply chains to food demand chains, underline the necessity of this understanding.

Given the current state of knowledge on value pricing capabilities, we propose a research framework in which we develop both our knowledge of value pricing capabilities in general, and its contributions to sustainable agriculture. These proposed research projects can be accompanied by case-based descriptions in and applications to agriculture. We distinguish four directions for future research: (1) extensions and refinement of the concept of value pricing capabilities, (2) resources and coordination of value pricing capabilities, (3) value pricing capabilities and environmental uncertainty, and (4) the relation of value pricing capabilities, corporate social responsibility, and sustainability.

Extensions and refinement of the concept of value pricing capabilities. This position paper provides a qualitative state-of-the-art review of the concept of value pricing capabilities. Two important direct contributions could be made, building directly on this review. First, the concept can be further refined to make it more suitable for normative predictions. Such an effort could be helpful to escape from the normative-descriptive discrepancy in pricing literature. Second, in addition to the qualitative review of the available studies, a quantitative review requiring meta-analysis techniques will help to determine the bottom-line in value pricing capabilities. Because in the past more studies have focused on the use of cost information in pricing practice than on value information, such an effort could answer the question: ‘how many firms are actually engaging in costs-based pricing?’. In other words: ‘how difficult is this value pricing capability actually?’.

Resources and coordination of value pricing capabilities. In order to really understand how value pricing capabilities function, a better insight is needed in which resources are used by value pricing (i.e. which types of knowledge) and how the use of these resources is coordinated within the firm. These studies could for example focus on questions such as ‘which business

functions participate in the pricing process and what are their relative contributions?', 'What do they learn during this process?', 'To what extent are these processes planned and to what extent improvised?' and 'How is knowledge transferred from value creation processes in the firm to pricing processes?', etc.

Value pricing capabilities in chains and networks. In order to understand how value pricing capabilities function in larger systems of firms, they should be studied in the context of chains and networks. These studies could focus on a variety of questions such as: 'Which type of relationships and network structures are beneficial to value pricing?', 'How are value pricing capabilities used in negotiations between chain partners and in what kind of contracts do they result?', and 'How do value pricing capabilities function when value is created for multiple customers?'. An example of the latter is a care farm that offers recovery facilities to patients and produces agricultural goods at the same time.

Value pricing capabilities and environmental uncertainty. The transition to sustainable agriculture is typically associated with uncertainty in the business environment of firms. A question that is particularly relevant to this respect would be the functioning of value pricing capabilities in different business environments. In particular high degrees of demand uncertainty ('is the value we create really valuable?'), and price sensitivity (consumers appreciate it, but still opt for the less expensive alternative), may effect the functioning of value pricing capabilities. The relevance of these capabilities in environments with increasing competition (e.g. low wage countries, ending protection by EU) could also be examined.

Relation of value pricing capabilities with corporate social responsibility (CSR) and sustainability. The relation of value pricing capabilities could be further specified in relation to value strategies and the incorporation of sustainability attributes in these strategies. These efforts could give more clarity with respect to questions such as: 'If firms make strategic change to value creation, when do value pricing capabilities start to develop?', 'If they start to develop, when do they start to pay off?' and 'Once they start to pay off, does this have an impact on CSR and the level of sustainability that the firm wishes to achieve?', etc. Emphasizing the central role of value pricing capabilities in business and general economic development, such a research effort could clarify how value pricing capabilities can be most effectively used for the sake of sustainability.

## References

- Abratt, Russell and Leyland F. Pitt (1985), "Pricing Practices in Two Industries," *Industrial Marketing Management*, 14, 301-6.
- Anderson, James C. and James A. Narus (1999), *Business Market Management: Understanding, Creating, and Delivering Value*. Upper Saddle River, NJ: Prentice Hall.
- Anttila, Mai and Christian Möller (2000), "Pricing Strategies and Practices of High-Technology Companies," in: *Marketing in the New Millennium, Proceedings 29th EMAC Conference, Rotterdam 2000*.
- Blinder, Alan S., Elie R.D. Canetti, David E. Lebow, and Jeremy B. Rudd (1998), *Asking About Prices: A New Approach to Understand Price Stickiness*. New York: Russell Sage Foundation.
- Boehlje, Michael (1999), "Structural Changes in the agricultural industries: How do we measure, analyze and understand them," *Journal of Agricultural Economics*, 81, 5, 1028-1041.
- Bolton, P. and M. Dewatripont (2005), *Contract Theory*. Cambridge, MA: The MIT Press.
- Bonoma, Thomas V., Victoria L. Crittenden, and Robert J. Dolan (1988), "Can We Have Rigor and Relevance in Pricing Research," in *Issues in Pricing, Theory and Research*, Timothy M. Devinney, ed. Lexington, MA: Lexington, 337-59.
- Brundtland, Gro H., Mansour Khalid, and others (1987), *Our Common Future; World Commission on Environment and Development*. Oxford: Oxford University Press.
- Capon, Noel, John U. Farley, and James Hulbert (1975), "Pricing and Forecasting in an Oligopoly Firm," *The Journal of Management Studies*, 12, 133-56.
- Capon, Noel and James Hulbert (1975), "Decision System Analysis in Industrial Marketing," *Industrial Marketing Management*, 4, 143-60.
- Chalfant, J.A., J.S. James, N. Lavoie, and R.J. Sexton (1999), "Asymmetric Grading Error and Adverse Selection: Lemons in the California Prune Industry." *Journal of Agricultural and Resource Economics*, 24 (July), 57-79.
- Coase, R. (1937), "The Nature of the Firm," *Economica*, 4 (November), 386-405.
- Coe, Barbara J. (1990), "Strategy in Retreat: Pricing Drops Out," *The Journal of Business and Industrial Marketing*, 5, (Winter/Spring), 5-25.
- Cressman, George S. Jr. (1999), "Commentary on: "Industrial Pricing: Theory and Managerial Practice"," *Marketing Science*, 18 (3), 455-57.
- Cyert, Richard M. and James G. March (1963), *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice Hall.
- Dean, Joel (1950), "Pricing Policies for New Products," *Harvard Business Review*, 28, 45-55.
- Dehaene, Stanislas (1992), "Varieties of Numerical Abilities," *Cognition*, 44, 1-42.
- Deloche, G. and X. Seron (1987), "Numerical Transcoding: A General Production Model," in *Mathematical Disabilities: A Cognitive Neuropsychological Perspective*, G. Deloche and X. Seron, eds. Hillsdale, NJ: Erlbaum, pp. 137-170.

Diamantopoulos, Adamantios (1991), "Pricing: Theory and Evidence-A Literature Review," in *Perspectives on Marketing Management*, M.J. Baker, ed. Chichester: John Wiley and Sons.

Dierckx, Ingemar and Karel Cool (1989), "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35 (December), 1504-11.

Dolan, Robert J. and Hermann Simon (1996), *Power Pricing: How Managing Price Transforms the Bottom Line*. New York: Free Press.

Dutta, Shantanu, Mark Bergen, Daniel Levy, Mark Ritson, and Mark Zbaracki (2001), "Pricing as a Strategic Capability," *MIT Sloan Management Review*, Spring, 61-66.

Dutta, Shantanu, Mark Zbaracki, and Mark Bergen (2003), "Pricing Process as a Capability: A Case Study," *Strategic Management Journal*, 24, 615-30.

Edwards, Ronald S. (1952), "The Pricing of Manufactured Products," *Economica*, 19, 298-307.

Enthoven, A.C. (1995), "Tribute to Charles J. Hitch," *OR/MS Today* (12).

Farley, John U., John A. Howard, and James M. Hulbert (1971), "An Organizational Approach to an Industrial Marketing Information System," *Sloan Management Review*, (Fall), 35-54.

Farley, John U., James M. Hulbert, and David Weinstein (1980), "Price Setting and Volume Planning by Two European Industrial Companies: A Study and Comparison of Decision Processes," *Journal of Marketing*, 44 (Winter), 46-54.

Feigenson, Lisa, Stanislas Dehaene, and Elizabeth Spelke (2004), "Core Systems of Number," *Trends in Cognitive Sciences*, 8, (7), 307-314.

Feuz, D.M. "Market Signals in Value-Based Pricing Premiums and Discounts." *Journal of Agricultural and Resource Economics* 24(December 1999):327-341.

Fletcher, Tony and Neill Russell-Jones (1997), *Value Pricing: How to Maximize Profits Through Effective Pricing Policies*. London: Kogan.

Fog, B. (1960), *Industrial Pricing Policies*. Amsterdam: North Holland.

Foxall, Gordon (1972), "A Descriptive Theory of Pricing for Marketing," *European Journal of Marketing*, 6 (3), 190-4.

Frambach, Ruud T., Ed J. Nijssen, and H. Van Heddegem (1997), "Industrial Pricing Practices and Determinants in Two Sectors," in: *Marketing Theory and Applications*, AMA Winter Educators' Conference Proceedings, Vol. 8, Hartline and Thorne (eds.). Chicago: American Marketing Association, 126-33.

Friedman, Milton (1953/1970), *Essays in Positive Economics*. Chicago: University of Chicago Press.

Gijsbrechts, Els (1993), "Prices and Pricing Research in Consumer Marketing: Some Recent Developments," *International Journal of Research in Marketing*, 10, 115-51.

Grewal, Druv and Larry D. Compeau (1999), "Pricing and Public Policy: A Research Agenda and an Overview of the Special Issue," *Journal of Public Policy & Marketing*, 18 (1), 3-10.

Hague, D.C. (1971), *Pricing in Business*. London: George Allen & Unwin Ltd.

Hall, R.L. and C.J. Hitch (1939), "Price Theory and Business Behaviour," *Oxford Economic Papers*, 2 (May), 12-45.

Hamel, Gary and C.K. Prahalad (1994), *Competing for the Future*. Boston: Harvard Business School Press.

Hooley, G.J., C.J. West, and J.E. Lynch (1984), *Marketing in the UK: A Survey of Current Practice and Performance*. Maidenhead, Berkshire: Institute of Marketing.

Hoste, Robert (2001), "Eerlijke prijs voor biologische varkensvleeskolom," *Agri-monitor*, 7 (5), p. 8.

Hunt, Shelby D. (2000), *A General Theory of Competition: Resources, Competences, Productivity, Economic Growth*. Thousand Oaks, CA: Sage.

Ingenbleek, Paul, (2002), *Money for Value: Pricing from a Resource-Advantage Perspective*. Tilburg: Tilburg University, CentER for Economic Research (dissertation).

Ingenbleek, Paul (2003, in Dutch), "De ketenintegratie voorbij: de herwaardering van ketens," In: *Stichting Agro Keten Kennis, De maatschappelijke impact van ketenkennis*. AKK: 's Hertogenbosch, pp. 7-14.

Ingenbleek, Paul (2005), "On the (Dis-)Ability of Firms to Quantify Chains." In: *Ondersteijn, Christine, Jo Wijnands, and Ruud Huirne (eds.) Quantifying the Supply Chain*. Wageningen: Wageningen Academic Publishers, forthcoming.

Ingenbleek, Paul, Liselore Crul, Ruud Frambach, and Bob Rietveld (2005), "Marketing Strategies for Sustainability." Position Paper for TransForum.

Ingenbleek, Paul, Marion Debruyne, Ruud T. Frambach and Theo M.M. Verhallen (2003), "Successful New Product Pricing Practices: A Contingency Approach," *Marketing Letters*, 14, 4, 289-305.

Ingenbleek, Paul, Ruud T. Frambach and Theo M.M. Verhallen (2004, in Dutch), "Prijsbepaling is ook belangrijk bij innovatie," *ESB (Economisch-Statistische Berichten)*, 4428 (5 maart 2004), 114-116.

Ingenbleek, Paul, Ruud T. Frambach, and Theo. M.M. Verhallen (2005), "Understanding the Market Orientation-New Product Performance Relationship: The Overlooked Role of Value Pricing." Working Paper.

Ingenbleek, Paul and Koos de Vlieger (2004, in Dutch), "Hoezo Waardering? Het waarderen van ketenpartners in kwaliteitsgerichte ketens," *VMT (Voedingsmiddelen Technologie)*, 12 (4-6-2004), 54-55.

Jones, K. (1994), *An Economist among Mandarins. A Biography of Robert Hall (1901-1988)*, Cambridge: Cambridge University Press.

Kirca, A. H., S. Jayachandran, and W. O. Bearden (2005), "Market orientation: A meta-analytic review and assessment of its antecedents and impact on performance," *Journal of Marketing*, 69(2), 24-41.

Kohli, Ajay K. and Bernard J. Jaworski (1990), "Market Orientation: The Construct, Research Propositions and Managerial Implications," *Journal of Marketing*, 54 (April), 1-18.

Lee, F.S. (1984), "The Marginal Controversy and the Demise of Full-Cost pricing," *Journal of Economic Issues*, 18, 1107-32.

Lichtenstein, Donald R., Minette E. Drumwright, and Bridgette M. Braig (2004), "The Effect of Corporate Social Responsibility on Customer Donations to Corporate-Supported Nonprofits," *Journal of Marketing*, 68 (October), 16-32.

Mongin, Philippe. (1992), "The 'Full-Cost' Controversy of the 1940s and 1950s: A Methodological Assessment," *History of Political Economy*, 24, 311-356.

Mongin, Philippe. (1997), "The Marginalist Controversy," in *Handbook of Economic Methodology*, J. Davis, W. Hands, and U. Maki, eds. London: Edward Elgar, 558-562.

Monroe, Kent B. (1971), "Measuring Price Thresholds by Psychophysics and Latitudes of Acceptance," *Journal of Marketing Research* 8 (November), 460-64.

Monroe, Kent B. (1973), "Buyers' Subjective Perceptions of Price," *Journal of Marketing Research*, 10 (February), 70-80.

Monroe, Kent B. (2003), *Pricing: Making Profitable Decisions*. New York: McGraw-Hill.

Monroe, Kent B. and Tradib Mazumdar (1988), "Pricing-Decision Models: Recent Developments and Opportunities," in *Issues in Pricing, Theory and Research*, Timothy M. Devinney, ed. Lexington, MA: Lexington, 360-88.

Myers, Matthew B. (1997), "The Pricing of Export Products: Why Aren't Managers Satisfied With the Results?," *Journal of World Business*, 32, 277-89.

Nagle, Thomas (1984), "Reviews of Research in Pricing," *Journal of Business*, 57 (1), S3-26.

Nagle, Thomas T. and Read K. Holden (1995), *The Strategy and Tactics of Pricing: A Guide to Profitable Decision Making*. Englewood Cliffs, NJ: Prentice Hall.

Nimer, Daniel A. (1971), "There's More to Pricing Than Most Companies Think," in *The Pricing Function: A Pragmatic Approach*, Ivan R. Vernon and Charles W. Lamb, Jr., eds. Lexington, MA: Lexington, 19-33.

Noble, Peter M. and Thomas S. Gruca (1999), "Industrial Pricing: Theory and Managerial Practice," *Marketing Science*, 18 (3), 435-54.

Oliver, Richard L. and John E. Swan (1989), "Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach," *Journal of Marketing* 53 (April), 21-53.

Otsuka, K., H. Chuma, and Y. Hayami (1992), "Land and Labor Contracts in Agrarian Economies: Theories and Facts," *Journal of Economic Literature*, 30 (December), 1965-2018.

Oxenfeldt, Alfred R. (1973), "A Decision-Making Structure for Price Decisions," *Journal of Marketing*, 37 (January), 48-53.

Pass, Christopher (1971), "Pricing Policies and Market Strategy: An Empirical Note," *European Journal of Marketing*, 5 (3), 94-98.

Pearce, I.F. (1956), "A Study in Price Policy," *Economica*, 23 (May), 114-127.

Prendergast, Canice (1999), "The Provision of Incentives in Firms," *Journal of Economic Literature*, 37 (March), 7-63.

Rao, Vithala R. (1984), "Pricing Research in Marketing: The State of the Art," *Journal of Business*, 57 (1), S39-60.

Rao, Akshay R. and Kent B. Monroe (1989), "The Effect of Price, Brand Name, and Store Name

on Buyers' Perceptions of Product Quality: An Integrative Review," *Journal of Marketing Research*, 26 (August), 351-57.

Robicheaux, R.A. (1975), "How Important is Pricing in Competitive Strategy," in *Proceedings Southern Marketing Association*, H.W. Nash and D.P. Robin, eds. (January), 55-57.

Salanié, B. (1997), *The Economics of Contracts*. Cambridge, MA: The MIT Press.

Samiee, Saeed (1987), "Pricing in Marketing Strategies of U.S.- and Foreign-Based Companies," *Journal of Business Research*, 15, 17-30.

Sanchez, Ron, Aimé Heene, and Howard Thomas (1996), *Dynamics of Competence-Based Competition*. New York: Elsevier Science.

Serageldin, Ismail. (1996), *Sustainability and the Wealth of Nations, First Steps in an Ongoing Journey*. Development Studies and Monographs Series No. 5. Washington DC: World Bank.

Serageldin, Ismail, and Andrew Steer (eds.) (1994), *Making Development Sustainable: From Concepts to Action*. Washington, DC: World Bank.

Shiple, David D. (1983), "Pricing Flexibility in British Manufacturing Industry," *Managerial and Decision Economics*, 4 (4), 224-33.

Sizer, John (1966), "The Accountant's Contribution to the Pricing Decision," *Journal of Management Studies*, 3 (May), 129-49.

Skinner, R.C. (1970), "The Determination of Selling Prices," *Journal of Industrial Economics*, 18, 201-17.

Tellis, Gerard J. (1986), "Beyond the Many Faces of Price: An Integration of Pricing Strategies," *Journal of Marketing*, 50 (October), 146-60.

Tversky, Amos and Daniel Kahnemann (1991), "Loss Aversion and Risk-less Choice: A Reference-Dependent Model," *The Quarterly Journal of Economics*, (November), 1039-1061.

Tzokas, Nikolaos, Susan Hart, Paraskevas Argouslidis, and Michael Saren (2000), "Industrial Export Pricing Practices in the United Kingdom," *Industrial Marketing Management*, 29, 191-204.

Udell, Jon G. (1964), "How Important is Pricing in Competitive Strategy?," *Journal of Marketing*, 28 (January), 44-8.

Udell, Jon G. (1968), "The Perceived Importance of the Elements of Strategy," *Journal of Marketing*, 32 (January), 34-40.

Udell, Jon G. (1972), *Successful Marketing Strategies in American Industry*. Madison: Mimir.

Venturini, L. and King, R.P. (2005) Vertical coordination and the design process for supply chains to ensure food quality. Working paper.

Vorhies, Douglas W. and Neil A. Morgan (2005), "Benchmarking Marketing Capabilities for Sustainable Competitive Advantage," *Journal of Marketing*, 69 (January), 80-94.

Wentz, Theodore E. (1966), "Realism in Pricing Analyses," *Journal of Marketing*, 30 (April), 19-26.

Wernerfelt, Birger (1984), "A Resource-Based View of the Firm," *Strategic Management Journal*, 5, 171-80.

Williamson, O.E. Transaction-Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics* 22(179): 223-61.

Woodruff, Robert B. (1997), "Customer Value: The Next Source for Competitive Advantage," *Journal of the Academy of Marketing Science*, 25 (2), 139-53.

Xia, Lan, Kent B. Monroe, and Jennifer L. Cox (2004), "The Price is Unfair! A Conceptual Framework of Price Fairness Perceptions," *Journal of Marketing*, 68 (October), 1-15.

Zeithaml, Valerie A. (1988), "Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52 (July), 2-22.

