

Agriproduct Supply-Chain Management in Developing Countries

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Supply-Chain Management: Understanding the Concept and Its Implications in Developing Countries

Elizabeth J. Woods*

Abstract

During the 1990s, academic and commercial interest in supply-chain management (SCM) in agribusiness rose in Europe and the USA. The driving forces included the trend towards consolidation of organisations (at farm input, farms, processor and supermarket levels), along with government deregulation of agribusiness markets. Interest was also rising in quality-management systems and food safety, and competition in markets was increasing, associated with global trade in agribusiness products. SCM as a field of study draws contributions from several disciplines including transaction-cost economics, relationship marketing, agency theory and systems studies. This paper analyses the role of SCM in the context of concepts of operational effectiveness and strategy put forward by M. Porter in 1996.

SCM implies managing the relationships between the businesses responsible for the efficient production and supply of agribusiness products from farm level to consumers, to reliably meet consumers' requirements in terms of quantity, quality and price. In practice, this often includes the management of both horizontal and vertical alliances. Meeting customers' requirements involves integrated management of the transactions and relationships between firms as well as processes within firms. Managing these relationships provides an opportunity for overtly negotiating the shares between chain members of the value produced within the chain. More importantly, joint planning of collaborative strategies is possible, to grow the shared value. The latter contrasts with the usual conflict between agribusiness suppliers and buyers about their relative shares of the value generated.

Traditional supply chains in developing countries typically involve many players, and are tightly linked with long-standing social structures. As developing countries enter into World Trade Organization arrangements their agricultural industries will be subject to increasing competition in their domestic markets, and have greater incentives to meet global standards in export markets. SCM provides one approach to planning the improvements needed in the management of their agricultural production and marketing systems to meet future challenges.

During the 1990s, academic and commercial interest in supply-chain management (SCM) in agribusiness rose in Europe and the USA. The concept and its

application have become one of the key areas of research and commercial focus in agribusiness for the past decade. Interest has spread in the past five years to include not only SCM in agribusiness practice in Western countries, but also the potential and implications of the concept in developing countries.

This paper outlines the background to rising interest in the concept of SCM. It presents working definitions of the concept, and describes the theoretical contributions that have guided the development

* School of Natural and Rural Systems Management, University of Queensland Gatton, Gatton Queensland 4343, Australia.
Current address: Executive Director, Research and Development Policy, Department of Primary Industries, Meiers Road, Indooroopilly, Queensland 4067, Australia. Email: <beth.woods@dpi.qld.gov.au>.

of the concept and the field of study. The paper presents arguments which show that SCM in its practical application straddles the concepts of operational effectiveness and of strategy, both of which are critical to business success.

SCM provides a useful framework for analysing the relationships between businesses engaged in both vertical and horizontal alliances as a means to pursuing consumer responsiveness, and is concerned with the development and nature of relationships between businesses in the supply chain. This includes the contribution to the development of value by the chain and the way in which value is shared between the chain partners. The role of new technologies in enabling SCM is also noted.

Finally, the potential application and value of the concept in planning, developing and managing agribusiness in developing countries are explored.

Background

Several changes in the operating environment of the food and agribusiness sectors contributed to rising interest in SCM, but it can be argued that the heart of the development was growing intensity in the competition for consumer expenditure. In line with other retail developments, greater differentiation of food products, improvements in product quality, and the ability to transport products in cost-effective ways provided consumers with a greatly increased array of products from which to choose. At the consumer level, the driving forces changing agribusiness included increasing consumer sensitivity to quality, safety, health and nutritional aspects of food products, and consumer interest in place of origin and means of production, including non-food values such as environmental sustainability and animal welfare. Consumers responded by exercising their ability to choose, and by this means, began to exert greater power than previously over the food production and marketing systems. In turn, it became clear to food suppliers that market success depended on responsiveness to consumer demands.

A term coined to describe this reorientation—chain reversal or consumer-driven chains—emphasises that the rise of consumer power spelt the end to the prevailing assumption at farm and agribusiness level that the job was simply to supply a product without concern about the consumers' requirements or the existence of a market for the product. Traditional agricultural and food businesses that had

focused strongly on price were not equipped to respond to a widening range of consumer demands. Individually, they lacked the means to deliver effective consumer response. Each represented only part of the processes involved in production of an agribusiness product and its subsequent transport, processing and retailing to the consumer. SCM provided a means to conceptualise management of the changes required in the system to efficiently respond to consumer needs, based on integration and co-ordination of the efforts of all the business units involved in the production and delivery processes.

Changes in the macro environment were occurring parallel to the changes at consumer level. These included a trend towards consolidation of organisations (at farm input, farm, processor and supermarket levels), principally to drive down the costs of production through economies of scale, but also to gain market share and competitive strength in an increasingly global market place. Preparing for global trade also led to deregulation of agribusiness markets by government withdrawal from marketing in several countries. This created the opportunity to rethink the business strategy, and create new supply-chain relationships.

Australia's recent deregulation of the dairy industry is an excellent example of change in a domestic market responding to the requirements for international trade, as mediated through the World Trade Organization (WTO). The deregulation process resulted in the commercial renegotiation of supply-chain relationships that had previously been subject to heavy government intervention and regulation. Consolidation following deregulation has provided one approach to the new competition between supply chains for market share and scale, and to generating efficiencies which could support greater investment in differentiation, brands and marketing of products, than had been possible within regulated markets.

Underpinning Theories

Supply-chain management simply refers to the management of the entire set of production, distribution, and marketing processes by which a consumer is supplied with a desired product. Folkerts and Koehorst (1998, p.385) define a supply chain as:

...a set of interdependent companies that work closely together to manage the flow of goods and services along the value-added chain of agricultural and food products,

in order to realize superior customer value at the lowest possible costs.

Some authors prefer the term *demand chain* as more clearly focusing on the consumer's requirements. The related term, *value chain*, highlights the contribution of functional parts of the chain (either within an enterprise or across a supply chain) to the development of customer value across the chain. While consumers do determine the market size and preference, they do not play an active role in the management of the chain. Implementing practical improvements to allow the chain to be more competitive and more responsive, requires active management initiated by one or more members of the supply chain, and supports the focus on supply-chain *management* as a basis for moving actively towards delivery of improved chain performance. In other words, all products reach consumers through a supply chain but not all chains have sufficient commitment and interaction to consistently improve efficiency, customer value and competitiveness through integrated management.

It is important to note that, in developed countries, SCM implies a focus on agribusiness units and business-to-business relationships. This differs from the industry or commodity focus traditionally adopted in agronomic research or in agricultural economics analyses of business improvement. It also differs from the community and participatory models that commonly form the basis of regional economic development and natural resource management studies. This focus on business units tends to lead to most SCM work being with larger industry players, and in markets where products are valuable and differentiated, rather than in commodity markets.

SCM as a field of study draws on several disciplines. These are summarised briefly below, with reference to literature through which the topics can be more fully explored.

- *Transaction-cost economics* analyses the costs associated with the exchange of goods and services (Hobbs 1996). This includes the costs of acquiring information, costs associated with negotiating and enforcing contracts, definitions of property rights, and the monitoring and changing of institutional arrangements which define the processes by which business transactions occur between companies. Transaction-cost economics emphasises asset specificity. The underlying assumption is that the more specific an asset is, the greater the incentive to develop long-term cooperation and

relationships which will enable the asset to make a long-term contribution to profitability.

- *Agency theory* involves defining the most appropriate forms of contract to protect the relationships between chain members (Eisenhardt 1989). The aim is to produce a contract or agreement which achieves a balance in relation to information asymmetry between chain members, uncertainty of outcomes, and the different levels of risk aversion held by chain members,

The agency theory approach is complementary to transaction-cost economics; together they focus on improving the economic efficiency of doing business between firms.

- *Power and power relationships* between businesses within a supply chain, and between the chain members and the government, have been studied by political scientists (French and Raven 1959). Boehlje et al. (1998) argue that the power of one business over another is dependent on the economic structure of the relationships. Power is related to dependency, and dependency is related to the availability of alternatives. The more alternatives a firm has, the less dependent it will be and the smaller the chance that it will be unduly affected by the power (real or perceived) of another firm.

The consolidation of agribusiness firms over the last two decades has much to do with attempting to gain real or perceived market power. At the upstream end, the small and fragmented businesses of smallholders have very little individual power, which may provide them with a strong incentive to work together.

- *Relationship marketing* refers to the move away from adversarial buyer-seller relationships to cooperative and collaborative marketing strategies, to deal with increasingly fierce competition (Gronroos 1994; Morgan and Hunt 1994). Relationship marketing recognises the importance of commitment and trust in business-to-business relationships, and that such relationships are dynamic and can develop only over time.
- *Network theory* recognises the reality that if *A* does business with *B* who then does business with *C*, *A* can affect *C*'s business performance despite the fact that they never do business together. The strategic networks concept emphasises that firms can gain stronger competitive positions by

working cooperatively than they can by operating individually (Easton 1992), and that networks with long-term supply-chain relations featuring trust and knowledge sharing are well positioned to deliver lower business costs than firms relying solely on spot transactions. As well as emphasising the importance of skills in managing relationships, the concept of networks emphasises the development by each firm of capabilities that are unique and hard to copy, thus ensuring that the firm will continue to be in demand as a chain partner able to fulfil specific functions.

- *Production/operations management and logistics* emphasise operational efficiency through minimising inventory and just-in-time supply. They have contributed to SCM as a management approach for planning gains through operational efficiencies. Some authors (Westgren (1998), for example) view the disciplines of operations management and logistics as the initial source of SCM studies.

SCM is a holistic approach that moves past the level of the individual manager or business to address all the processes from the initial assembly of raw materials to the final retail processes that provide the customer with access to the product. In that sense, it is a systems approach (Beers et al. 1999). It represents a significant step forward from analysis at the level of an individual farm or agribusiness in isolation from its wider context. It could be viewed as a parallel to the step between crop or animal husbandry research and the study of farming systems, where the latter has greater potential to optimise both production outcomes and protection of natural resources (at the system level).

SCM: for Operational Effectiveness or Strategy?

Porter is recognised as a leading figure in the study of strategic management in the late part of the twentieth century. In his seminal paper ‘What is strategy’ (Porter 1996), he draws the distinction between the pursuit of operational effectiveness and the development of strategy. He argues that, by their nature, many popular management tools of the last 20 years—including benchmarking, best practice, and quality systems—are designed to match competitors in operational effectiveness. Along with the trend to

greater outsourcing (which can lead to competing firms sourcing key inputs from the same supplier) these approaches contribute to greater uniformity between industry competitors and reduced consumer choice.

Given the diversity of consumer interests and the desire of consumers to choose products that match their needs, perceptions and values, strategies which result in a move towards greater industry uniformity are unlikely to lead a business to a successful market position. Hence, operational effectiveness is a necessary but not sufficient condition for improving business performance. Many aspects of SCM (improved logistics, shared information systems and better information flows, reduced transaction costs, preservation of product quality, standards and integrity throughout the chain) are, at their heart, efforts to improve the operational effectiveness of a chain. Adopting these approaches is important in matching competitors and increasingly they are a necessary condition for access to certain markets (export markets, supplying to supermarkets). However these approaches will not guarantee a sustainable competitive advantage.

By comparison, Porter argues that the crux of strategy is doing something different that is hard for competitors to match. Critical to developing sustainable competitive advantage is recognising that choices need to be made, since doing more of one thing will necessitate doing less or none of another (termed trade-offs). The more that activities or functions within a firm or a supply chain can be made self-reinforcing (to deepen the strategic position), or the more they depend on human capabilities and relationships, the more likely it is that the strategy will lead to sustainable competitive advantage, because these approaches are intrinsically hard to copy.

SCM provides opportunities to develop strategies that meet these criteria. Potential strategies include:

- reducing market risks by working towards interdependency (where business activities are interdependent to the point that the costs of switching to a new supplier or customer are sufficiently high to inhibit the development of new relationships)
- cooperating to learn how to create value together and then collaborating to consistently utilise the new value as a source of competitive advantage (Collins et al. 2002)

- using the established relationship as a platform to build additional product lines or new markets; that is, to innovate together.

Porter's concept of strategy has relevance in the discussion of SCM as a useful management concept. The key to development of chain relationships is commitment to longer-lasting relationships instead of spot transactions (which may offer short-term advantages in certain parts of the price cycle). Chain relationships are built on the relationships developed at a range of levels between two firms (typically between senior managers, distribution/receivables, sales/accounts, sales/production). Developing relationships requires significant effort, and the maintenance of the relationships is an ongoing commitment. As the investment in a relationship grows, so the cost grows to duplicate a similar relationship. Hence, the cost of leaving a relationship increases over time, leading to interdependency. It is in the interests of a chain member to proactively work with its chain partners to ensure their mutual ongoing viability, because the alternative (creating new relationships) is too costly.

Application and Implications of Supply-Chain Management

Recent studies of supply chains in Australia identified six key principles of successful SCM (AFFA et al. 2002). These are:

- a focus on customers and consumers
- the chain creates and shares value with all its members
- making sure the product fits the customers' specifications
- effective logistics and distribution
- an information and communication strategy that includes all chain members
- effective relationships that give leverage and shared ownership.

The discussion in this section on the application and implications of SCM will be structured around these six features.

Since the driving force behind the developing interest in SCM was the need for new strategies to achieve sustainable advantage in increasingly competitive agribusiness markets, a critical factor to success is how effectively the chain addresses customers' wants and needs. The value built by a chain (which can then sustain the future operations of the

chain members) depends on coordinated responsiveness to customers' requirements.

In principle, SCM can shift the traditional conflict between supply-chain partners about their relative shares of benefits to a focus on increasing the total value available to be shared. This should be attractive, because potentially there are better gains for all in this approach. In practice, all levels of the chain must derive value from the chain and from potential improvements, to ensure all chain members agree to proposed change.

Implementation of SCM in Western countries has emphasised participatory and/or facilitated processes that build relationships and increase understanding and trust between chain members in the process of developing shared plans and identifying opportunities for long-term collaboration. A skilled outsider may facilitate such processes. In practice, there is also a need for 'chain champions'. These are members (or a member) of the chain with a vision of the opportunities that could arise from closer collaboration and with the energy to organise and drive processes of relationship building and collaboration. In new agro-industry development, building a supply chain has been demonstrated to be just as critical to the success of the industry as establishing adequate agronomic and pest-management practices.

As noted earlier, SCM provides a framework for the analysis and recognition of power in supply chain relationships and for the discussion of how to share the value generated by the chain. Achieving more efficient SCM often requires horizontal collaboration at levels in the chain where there are multiple small players. This reduces the transaction costs between the vertical levels in the chain and may reduce power imbalances that occur in interactions between large powerful players (such as supermarkets) and small individual growers.

Closer relationships and better understanding of the chain and customer value may provide opportunities for farmers to extend their operations along the chain. For example, additional grading that improves product shelf life and reduces wastage (and the associated labour costs for retailers to 'pick over' shelves) represents extra value added by the farmer and may be recognised with higher payment by retailers, offset by their savings in labour costs. Similarly, a farmer who develops the capacity to pack into consumer-friendly trays is helping the retailer to manage product safety and reduce the risk of in-store contamination of the product. If the farmer's packs also carry

a bar code, the costs of weighing product at the check out and of training retail staff to identify fresh produce can also be saved.

SCM enables the development of quality systems and product-integrity systems throughout the chain. When they focus on the features that customers value, such systems are the tools by which transactions costs may be decreased and operational effectiveness increased. Similarly, SCM allows for sophisticated management of logistics including optimisation problems and through chain inventory control. There are opportunities to minimise waste (shrinkage) along the chain, which is often a major cost in marketing fresh food items.

Working in the supply chain context may offer participants new insights into the relative importance of alternative products and markets. In the absence of an attempt to achieve integrated management, most supply chain members will have regular contact and communication with only their immediate supplier and immediate buyer.

SCM may lead to detailed descriptions, and mapping of flows of product, information, and revenue throughout the chain. It also provides an opportunity to examine activities undertaken and services performed at each level in the supply chain, enabling all the participants in SCM to gain a broader understanding of the way in which customer value is developed in the chain, and the possibilities to develop new value or develop value more effectively. SCM can provide similar insights to scientists whose usual focus is on technical issues at a particular level in the chain, and to economists who routinely analyse the industry at one level in the chain (e.g. production economics at farm level), but not the business or business-to-business interactions. Government policy makers have also utilised SCM to identify factors that may inhibit chain development and performance, and to conceptualise policy measures that might assist businesses to overcome barriers and achieve more competitive export performance (see, for example, Gifford et al. (1998)). The Australian Government has initiated a research, training and industry program in SCM in response to its realisation that despite growing export opportunities in Asia, Australia's market share for both commodity and processed food products was declining in these markets.¹

The nature of chain relationships is informed by substantial business and management literature on strategic alliances, and by an increasing literature on

SCM in relation to agribusiness. Relationship issues to be considered may include:

- agreeing to share long-term development goals and seasonal business planning
- developing relationships between operational staff within the businesses on issues such as, for example, timing, amount, ripeness and temperature of deliveries
- developing shared quality and safety standards and agreeing how and when they will be measured and monitored
- linking information systems to track product flows and standards.

In SCM the focus is usually on long-standing relationships based on informal or trust arrangements rather than ownership or contract relationships. The former are valued because they allow flexibility and they constantly reinforce how each partner will benefit from collaborating to ensure a successful and competitive chain.

Rising interest in SCM has been strongly supported by the capabilities of new technologies. In particular the application of information systems can improve information flows and, with the addition of e-commerce facilities, can facilitate revenue flows. Satellite positioning system technologies are an example of technology can be used to monitor product flows. Conversely, well-developed SCM is contributing to the management of other frontier technologies. SCM enables management of supply chains where the products have embedded intellectual property (e.g. unique germplasm), through its potential to tightly control product flows and maintain clearly differentiated lines of product with unique and valuable characteristics.

SCM: What Value in Developing Country Agribusiness?

Finally, in this section the potential application and value of the SCM concept in planning, developing and managing agribusiness in developing countries is explored.

Farmers in the developing world face a similar cost-price squeeze to that affecting farmers in the

¹ Publications arising from this program are listed on the AFFA website, <<http://www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A01607>>.

developed world. The need to feed rapidly growing populations tends to result in policies to keep food prices low, making innovation and investment unattractive even if the capital and management capacity needed are available.

However, there are opportunities for developing country farmers in the expanding total population and increasing urban populations, and hence a growing consuming class. At least in the short term, this group can be expected to spend more on higher quality and more varied produce than do people at lower income levels. Projections on future trends (Coates et al. 1997) suggest that, in terms of volume, most of the growth in demand for food will be middle-class consumption in the large countries of the developing world including China, India, Indonesia and large countries in South America (termed World 2 in their scenario). Much of this demand will be met domestically (by World 2 countries) but against competition from exporting countries. The primary basis of competition will be price but the presence of exporting competitors will also mean the gradual adoption of 'world' quality standards. This represents an incentive for better SCM in developing countries.

This effect is enhanced by the increasing implications of the WTO for developing countries. The priority to increase the competitiveness of domestic agriculture and agribusiness is demonstrated by the following extract from a publication of the Indonesian Ministry of Agriculture (MOA 2001):

...liberalisation of international trade that has been happening or is still in the process of being established is a challenge facing agribusiness development. WTO/GATT commitments to reduce or eliminate various forms of protection, tariff or non-tariff, mean opportunities as well as challenges. For nations with the ability to improve their competitive strength, the opportunity is open to increase domestic and international market share. Conversely, for nations with no capacity to

improve their competitive strength, it means adverse effects, the challenge to recede and step down. For this reason, there is no option for Indonesia but to accelerate strengthening competitive capacity.

In helping developing country farmers take advantage of the growth opportunity to supply the consuming classes, the aim should be to build the capacity of domestic producers to match the products that exporting countries will be aiming to put into Asian markets. SCM provides one conceptual approach to meet this need. To not assist developing country farmers to participate would see them cut out of the major growth sector in food markets in the world. Their displaced product would depress domestic prices for lower class consumption and further exaggerate the cost-price squeeze.

Many authors, including Heilbron and Larkin (1995), have commented on the developing dualism in food markets in Asia. Traditional markets continue to provide for the bulk of the population through delivery to wet markets and subsequent distribution by a variety of small retailers. These chains are characterised by multiple levels, fragmentation, highly variable standards, and poor infrastructure and logistical support. In parallel, large Western style retailers are providing global standard goods and services to the elite and middle classes in major cities. These retail developments were begun by Japanese retailers in the 1980s and followed in the 1990s by Western food retailers. The Asian economic crisis provided many of these Western companies with opportunities to rapidly expand their foothold at low prices (DFAT 2002).

Supermarkets are most profitable when they are located in areas of high rate of population growth of people with consumer incomes, high-income growth rates, and low supermarket penetration. This is the precise description of the long-term trends in much of Asia. SCM practices for this sector might be expected

Table 1. Projected population growth to 2025 (in billions).

	1994	2025
Total world	5.6	8.4
World 1: the affluent, advanced nations, e.g. Europe, the USA and Japan	1.0	1.3
World 2: middle countries with needs and resources in balance, e.g. China, India, Indonesia, large countries in South America	3.5	5.1
World 3: the destitute countries, e.g. sub-Saharan Africa	1.1	2.0

Data sourced from Coates et al. (1997).

to be similar to Western supply chains at the downstream end. At the upstream end, consolidation could be expected, relative to traditional supply chains, to achieve reliable supply and consistent quality. International retailers will also seek to provide food safety and health standards similar to their operations in the West. The risk of a major accident is serious for a global retailer, both in terms of their international reputation and because their pockets are perceived to be very deep in relation to compensation and penalty payments.

Studies of the traditional supply channels in developing countries often focus on issues of lack of power of farmers, linked to the lack of timely information flows. The traders or merchants are usually identified as powerful and able to extract value at the expense of farmers who are cash and information poor. However, there are alternative views. Kono and Goto (2002) in a study of marketing channel development in the banana industry in Indonesia, conclude that all parties—growers, collectors and traders—must contribute to developing pluralistic and reliable marketing channels. Woods et al. (2000) noted a workshop situation in which a trader motivated farmers *to strive for good products, being competitive and becoming a champion*. Hence, traders have been observed to play a mixed role—of channel manager, information supplier, co-investor and extension officer—suggesting a mutual benefit rather than a win–lose relationship may exist with smallholders, at least in some circumstances.

In situations where trust already exists, the most profitable application of SCM may be to improve operational effectiveness. Options for improvements might include training to increase the skills and capacities of chain members so that they are more able to adapt to change, improved infrastructure and logistics, and better information flows, especially in relation to markets and consumer preferences. Improvements that took traditional supply chains in these directions might provide a step towards the possibility of these chains developing export capabilities.

Trienekens and Beulens (2003) present a research agenda on innovation through food supply chains and networks in developing countries. Based on case studies that investigate supply chains involving upstream production in developing countries for export, or for Western style retailing in developing countries, they identify the following three key questions:

- Do innovations at the consumer end induce innovations at the upstream (farmer) end of supply chains in developing countries?
- Are there any system effects, for example, on economic development, sustainable development and standards, of innovations at the consumer end of the chain?
- Which institutional arrangements within chains and networks are best able to survive in developing countries and why?

Similar questions need to be asked about the potential impacts of improving traditional supply chains in developing countries. Questions for a research agenda might include:

- Can improved management of traditional supply chains improve the quality of life of smallholders?
- Can improved management in traditional supply chains improve the supply and quality of food for increasing numbers of urban residents in developing countries?
- Which institutional arrangements are best able to deliver benefits, and how can these benefits be shared to encourage further improvements?

References

- AFFA (Department of Agriculture, Forestry and Fisheries Australia), University of Queensland, and National Food Industry Strategy 2002. Forming and managing supply chains in agribusiness: learning from others. Canberra, AFFA, CD-ROM.
- Beers, G., Beulens, A. and van Dalen, J. 1999. Chain science as an emerging discipline. In: Proceedings of the Third International Conference on Chain Management in Agribusiness and the Food Industry, Wageningen Agricultural University, The Netherlands.
- Boehlje, M., Schrader, L. H. and Akridge, J. 1998. Observations on formation of food supply chains. In Proceedings of the Third International Conference on Chain Management in Agribusiness and the Food Industry, Wageningen Agricultural University, The Netherlands, 393–403.
- Coates, J.F., Mahaffie, J.B. and Hines, A. 1997. 2025: scenarios of U.S. and global society reshaped by science and technology. Greensboro, NC, Oakhill Press, 516p.
- Collins, R., Dunne, T. and O’Keefe, M. 2002. The ‘locus’ of value: a hallmark of chains that learn. *Supply Chain Management*, 7(5), 318–321.
- DFAT (Department of Foreign Affairs and Trade) 2002. Subsistence to supermarket II: agrifood globalisation and Asia. Vol. II, Changing agrifood distribution in Asia. Canberra, Australia, DFAT, 316p.

- Easton, G. 1992. Industrial networks: a review. In: Axelson, B. and Easton, G., ed., *Industrial networks: a new view of reality*. London and New York, Routledge, 3–27.
- Eisenhardt, K.M. 1989. Agency theory: an assessment and review. *Academy of Management Review*, 14, 57–74.
- Folkerts, H. and Koehorst, H. 1998. Challenges in international food supply chains: vertical co-ordination in the European agribusiness and food industries. *British Food Journal*, 100, 385–388.
- French, J.R.P. and Raven, B. 1959. The bases of social power. In: Cartwright, D., ed., *Studies in social power*. Michigan, Michigan Institute for Social Research, 150–167.
- Gifford, D., Hall, L. and Ryan, W. 1998. *Chains of success: case studies on international and Australian food businesses cooperating to compete in the global market*. Canberra, Australian Government Publishing Service.
- Gronroos, C. 1994. From marketing mix to relationship marketing: towards a paradigm shift in marketing. *Management Decision*, 32, 4–20
- Heilbron, S. and Larkin, J.T. 1995. *Corporate strategies and structure: penetrating Asian markets*. Canberra, Rural Industries Research and Development Corporation, Research Paper 95–7.
- Hobbs, J.E. 1996. A transaction cost approach to supply chain management. *Supply Chain Management* 1(2), 15–27.
- Kono, Y. and Goto, J. 2002. Marketing channel development. In: Goto, J. and Mayrowani, H., ed., *Potentials and constraints of banana based farming systems: a case of an upland village in West Java*. Tsukuba, Japan, JIRCAS Working Report No. 29, 41–46.
- MOA (Ministry of Agriculture) 2001. *Agribusiness system development as prime mover of the national economy (1st ed.)*. Jakarta, Government of Indonesia, 80 p.
- Morgan, R.M. and Hunt, S.D. 1994. The commitment–trust theory of relationship marketing. *Journal of Marketing*, 58, 20–38.
- Porter, M. 1996. What is strategy? *Harvard Business Review* 74(6), 61–78.
- Trienekens, J. and Beulens, A. 2003. Innovation through (international) food supply chain development. A research agenda. In: 13th Annual World Food & Agribusiness Symposium, Cancun, Mexico, 21–24 June 2003. <<http://www.ifama.org/conferences/2003Conference/papers/trienekens.pdf>> , 12p.
- Westgren, R.E. 1998. Innovation and future directions of supply chain management in US agrifood. *Canadian Journal of Agricultural Economics*, 46, 519–524.
- Woods, E.J., Wei, S., Singgih, S. and Adar, D. 2000. Supply chain management as beyond operational efficiency. *Acta Horticulturae*, 575, 425–431.