Determinants of buyer-seller relationships in agribusiness supply chains for dry-land farming products in Lombok Indonesia

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Abstrak


Kata kunci: rantai pasokan, pertanian lahan kering, hubungan pembeli-penjual

Abstract

Although there have been a number of success stories from the agricultural development programs undertaken in Indonesia it is acknowledged that the change has not led to a significant improvement of farmers’ welfare. This is generally the case for dryland farmers in Lombok. Much of the research and extension effort in Lombok has been targeted at developing improved dryland production systems and little effort has been devoted to developing the product supply chains. This paper describes the agribusiness supply chain (SC) issues for produce from small farmers in dry land areas and analyses the factors contributing to the supply chain process. This study has looked at four product supply chains – those for maize, peanuts, cassava, and paddy. The results explore the relationships between farmers and others in the supply chain.

Key words: supply chain, dryland farming, buyer-seller relationship
Introduction

Background

Indonesian development efforts have mainly focused on the agricultural sector. Kasryno and Suryana (1992) and Todaro (1994) highlighted the importance of this sector mainly through its significant contribution to GDP and non-oil export commodity income but also because of its ability to absorb excess labour in the workforce and provide jobs and income for rural people. The bulk of research conducted on dryland farming have concentrated on production technology and not considered the importance of the interactions between buyers and sellers in agribusiness supply chains.

A supply chain is a network of organisations that are involved through upstream and downstream linkages in the different process and activities that produce value in the form of products and services in the hands of the ultimate consumers (Christopher, 1998). Chopra and Meindl (2001) describe a supply chain as a process consisting of all stages involved, directly or indirectly, in fulfilling a customer request and not only include the manufacturer and supplier but also transporters, warehouses, retailers and customers themselves.

Like most produce supply chains there is a need for the tengkulak as buyer and farmer as seller to develop a relationship so that each other’s interests are met. The tengkulak know the type of produce needed and the farmers know how to produce it. This interdependence between the tengkulak and farmers suggest that both parties need to develop and maintain an effective relationship.

Buyer-supplier relationships in the supply chain are one of the most important elements of supply chain integration therefore establishing and managing effective relationships at every link in the supply chain is becoming the prerequisite of business success (Hsiao et al., 2002). The need to develop such relationships is based on such factors as the need to increase efficiency, cost effectiveness, increase loyalty to supplier, reduce uncertainty and competitive position (Kalwani and Narayanadas, 1995; Evans and Laskin, 1994; Dwyer et al., 1987; Wilson, 1995). Dwyer et al. (1987) noted that there are five phases in the development of buyer-seller relationships. These are 1) awareness, 2) exploration, 3) expansion, 4) commitment, and 5) dissolution.

Buyer Seller Relationship

The literature has identified a range of factors that affect the establishment and maintenance of long-term buyer seller relationship. Wren and Simpson (1996) concluded that there were four factors: salesperson-related factors, buyer-related factors, factors related to interaction and outcome factors. Dwyer et al. (1987) and Wilson (1995) determined that
commitment, trust, cooperation, mutual goals, interdependence and power, performance satisfaction, structural bonds, comparison level of alternatives, adaptation, shared technology and social bonds were the important relationship success variables. At last Anderson and Weitz, (1992); Han et al., (1993); Morgan and Hunt, (1994) have reduced this set of variables to trust, commitment and satisfaction.

Trust

Trust has proved to be the key focal point of studies about buyer-seller relationship in produce supply chains. If one party want to maintain the long-term relationship, buyer and seller must learn to trust each other to understand their right and obligations (Han et al., 1993). Trust has been defined in several ways. Moorman et al. (1992) defined trust as a willingness to rely on an exchange partner in whom one has confidence. Similarly Doney et al. (1998) stated trust as a willingness to rely on another party and to take action in circumstances where such action makes one vulnerable to the other party. Both these definitions reflect reliance on the other partner and involve uncertainty and vulnerability. Another definition of trust is a party’s expectation that another party desires coordination, will fulfil obligations, and will pull its weight in the relationship (Dwyer et al., 1987). While Morgan and Hunt (1994) stated that trust exists when one party has confidence in an exchange partner’s reliability and integrity.

Therefore, trust between parties does not exist automatically. Han et al. (1993) argue that a trust emerges from a constant and detailed exchange of information that reduces uncertainty and both partners alway meet commitment. Swan et al. (1985) indicate the key dimensions of developing trust between buyers and sellers were competence, customer orientation, honesty, dependability, and likeability. While Moorman et al. (1993) included sincerity, integrity, tactfulness, timeliness and confidentiality.

Commitment

Commitment is seen as an enduring desire to maintain and value a relationship (Moorman et al, 1993). It is an implicit and explicit pledge of relational continuity between exchange partners (Dwyer et al., 1987) and is seen by Wilson (1995) as the final success variable that becomes pertinent in the final stages of the long-term relationship development (e.g., top accounts). Wren and Simpson (1996) view commitment as the attitude-based outcomes of the interaction in buyer-seller relationship that will be maintain if there is a high importance place on the relationship between supply chain players. If both parties considered the relationship is important, there is a commitment to continue it into the future Wilson (1995).
Satisfaction

Satisfaction has been defined as a positive affective state resulting from an appraisal of all aspects of a firm’s working relationship with another (Frazier et al., 1989). While Oliver (1980) defined customer satisfaction and dissatisfaction as the consumer’s evaluation of the success or failure in meeting expectations, if the firm can meet expectations will result satisfaction and vice versa. Oliver (1980) argued that consumer satisfaction involved two cognitive processes: expectation and disconfirmation (performance above or below expectation). If the level of disconfirmation was positive then the likely result is satisfaction, whilst the opposite is also true. Similarly, Homburg and Giering (2001) confirm that satisfaction results from and evaluation between a predetermined level of performance and the actual performance perceived as a result of a transaction(s). Other research has noted that the feelings produced from satisfaction can be categorised into five different types of feeling: 1) contentment (acceptance or tolerance), 2) pleasure (an evoked positive experience ending with happiness), 3) relief (aversive state is removed), 4) novelty (interest or excitement due to expected or unexpected events), and 5) surprise (delight or outrage due to far exceeded or unmet expectations). This concept should be broadened to capture both the economic and non-economic aspects of the exchange while at the same time recognizing that satisfaction with the exchange also impacts on the morale of supply chain participants and their incentive to participate in collaborative activities (Geyskens et al., 1999).

Research Objectives

The objectives of this research are: to understand the agricultural production and marketing activities applied in dryland farming of Lombok Island; to describe the pattern of agribusiness supply chain for dryland farming products of Lombok Island; and to identify the factors affecting buyer seller relationship along the agribusiness supply chain for dryland farming products of Lombok Island

Significance of Study

The result of this study is expected to be useful for agribusiness supply chain actors as information to design and plan a supply chain that fairer and more profitable; for policy maker to improve regulations regarding agribusiness supply chain; and for researcher and academia as scientific information to support the development of the study of relationship marketing

Methodology

Data for this study was obtain from a face-to-face survey of 454 dryland farmers and 54 farm produce buyers in Lombok, Indonesia. The survey was conducted between December 2002 and August 2003. A total of 454 farmers were randomly selected from two villages (or desa) of two sub-
districts (or kecamatan) with 227 from each village. The northern area village was Desa Akar-akar of Kecamatan Bayan and Desa Kawo of Kecamatan Sengkol in the southern zone. The villages were purposively selected based on the criteria that the farming in each was 100 percent dryland and because each village had the largest dryland area in its zone.

Data collection is conducted under survey technique based on structured open-ended questionnaires. Two questionnaires were developed – one for farmers and one for intermediaries. Interview was using local dialect to minimise the effect of language bias. Respondents were asked to respond to each statement on a six-point scale from 1 (I disagree a lot) to 6 (I agree a lot).

The responses were then analysed using factor analysis with Principle Component method and Varimax rotation (Hair et al, 1992). The formulation of this analysis is as follows:

\[ F_i = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + ... + W_{ik}X_k \]

\[ F_j = W_{j1}X_1 + W_{j2}X_2 + W_{j3}X_3 + ... + W_{jk}X_k \]

\[ M \]

\[ F_k = W_{k1}X_1 + W_{k2}X_2 + W_{k3}X_3 + ... + W_{kk}X_k \]

Fi is the i-th factor or principle component; Wi is coefficient value of i-th factor or principle component and K is the number of analysed variables. The reliability of the result is measured with the value of Kaiser-Meyer-Olkin (KMO) index between 0.5 and 1.00 and Eigenvalue ≥ 1.00 (Supranto, 2004).

**Results and discussion**

**Agricultural Production and Marketing on Lombok**

In Indonesia, most farms vary in size from 0.2 ha to less than 5 ha (Soerojo et al., 1991). In Lombok, over 60 percent of farmers have landholdings of less than one hectare and the majority of farms (70 percent) are in dryland areas relying on rainfall for crop production (Dinas Pertanian Propinsi NTB, 2001). The majority of farmers cultivate food crops like paddy, soybean, maize, and cassava as main crops to primarily satisfy household requirements with any excess sold. Although primarily subsistence in nature dryland farming in Lombok plays a significant role in meeting the populations need for food and food products.

Most dryland farmers sell their farm produce fresh to a village intermediary or tengkulak. Two selling methods exist in the trading: weight-
based and the tebasan method. In the weight-based method farmers have to move their farm produce to the nearest car accessible roadside for the buyers. The buyers then weigh and pick up the produce. Farmers therefore are required to pay the transportation cost from the farm to roadside. With the tebasan method, farmers sell their farm produce at farm-gate prior to harvest. In this case, both farmers and buyers must be careful to estimate the value of the produce in order for each to negotiate a profitable price. Farmers sell this way because they lack money to pay for harvest labour and other harvest costs. Many farmers also feel that it is more profitable to trade with this method.

In most developing countries including Indonesia, farmers often find it difficult to satisfy buyers’ requirements because of the seasonal nature of production, small land holdings, traditional cultivation methods, capital constraints and the lack of farmer knowledge (Aksoy and Kaynak, 1993). In Lombok there is limited supply chain coordination meaning farmers often do not really know the kind and amount of produce that buyers require at harvest. Furthermore, due to lack of knowledge and capital, dryland farmers normally cultivate their crops using traditional methods and local seeds.

**Agribusiness Supply Chain for Dryland Farming Produce**

Three kinds of farm produce supply chains were observed serving dryland farmers, each related to the type of produce sold: maize and peanuts, cassava and paddy (see Figures 1 a-c).
In all each supply chain, farmers sell the produce to village intermediaries – usually called tengkulak. Farmers were unable to sell directly to sub-district intermediaries or to wholesalers each of which wanted some post-harvest processing. Farmers usually don’t have the capacity due to two main reasons: 1) most farmers do not have appropriate facilities like
drying floors and packaging equipment to handle the process; and 2) the need by farmers to obtain cash immediately after harvesting to repay their farm input credit or to purchase new farm inputs for second crops.

The survey clearly showed that farmers were not aware of who is the final consumer of their produce and were clearly focused on being able to sell their farm produce in the village and receive payment. Some farmers knew that their produce was exported from the island but were not worried about the detail. Most farmers did not want to further complicate their farm produce trading process. Both farmers and village intermediaries noted that their supply chain was based on traditional village values including trust. Similar results have been found in banana supply chains in West Java (Singgih and Wood, 2003).

Farmers were found to trust village intermediaries most of the time when considering the price they received for their farm produce. The main reason for this is thought to be because farmers are isolated from city markets and did not have appropriate access to market information. Another reason is the traditional value held by the villagers that were not prepared to question intermediaries about price in case that inferred a lack of trust of the intermediaries’ activities by the farmer. The villagers normally thought that the richer has higher status than those who are poorer. The situation is, most farmers were poor people in the village.

Village intermediaries (as buyers) also thought that they must cooperate with other villagers like the farmers. Cooperation is considered as the basis of social interaction among villagers. The tradition is that every villager is expected to respect another’s right, including the right to earn money to ensure that their family can supply its needs. Conducting business activities that produce significant profits for the intermediary without considering other party’s needs is categorised disrespectful. Therefore, the buyers who were also villagers did not want their farmer suppliers to face a lost. This does not mean that there us no competition for supply of produce as the intermediaries must also compete with other buyers for farm produce which requires them to maintain their relationship with their preferred farmer suppliers.

Factors Affecting the Buyer-Seller Relationship

The factor analysis (using principal component analysis) of the farmer and village intermediary responses resulted in five factors (Table 1). The variables included in the first factor are closely related to “Quality of the relationships”. The variables “always meets promises” and “always considers my interest” are the main variables highlighted by this factor. The factor has a high level of reliability with a Cronbach’s alpha value of 0.914 and explains 21.355 percent of total variance. Relationship quality in this study was conceptualised as a high order construct with main variables being commitment and transparency in the transaction.
Three variables were related to commitment - always meeting promises, always considering your partner’s interest, and does not mind taking risk together. Two further variables in this construct were variables related to fairness. Other people in the supply chain also noted that the quality of the relationship was the main factor influencing buyer-seller relationships. This concurs with the research by Kumar et al. (1995) who found that relationship quality was the dominant factor in relation to six other factors relating to relationships. Moreover, Hibbard et al (2001) found relationship quality also as a high order construct. This means that if both parties can maintain the quality of their relationship, there will be the continuity of the relationship.

Table 1  Factors explaining the relationship between buyers and sellers of farm produce from dryland farming systems on Lombok Island

<table>
<thead>
<tr>
<th>Factor Loading</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td><strong>Quality Related Factor</strong></td>
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<tr>
<td>My trading partner (MTP) always meets promises</td>
<td>0.884</td>
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<tr>
<td>MTP always considers my interests</td>
<td>0.862</td>
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<tr>
<td>MTP usually understands my expectation</td>
<td>0.820</td>
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<td>MTP treats me fair</td>
<td>0.772</td>
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<tr>
<td>MTP does not mind taking risks together</td>
<td>0.952</td>
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<td><strong>Continuity Related Factor</strong></td>
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<td>MTP plan to continue business in the future</td>
<td>0.957</td>
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<tr>
<td>MTP often meets my needs</td>
<td>0.952</td>
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<tr>
<td>MTP believe long term relationships are good</td>
<td>0.944</td>
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<tr>
<td>MTP realises we are depended on each other</td>
<td>0.734</td>
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<td><strong>Financial Related Factor</strong></td>
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<tr>
<td>MTP offers me the best price</td>
<td>0.949</td>
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<tr>
<td>MTP provides a financial solution</td>
<td>0.872</td>
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<tr>
<td>MTP does not mind paying extra cost</td>
<td>0.863</td>
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<tr>
<td>MTP always gives me market information</td>
<td>0.852</td>
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<tr>
<td><strong>Trust Related Factor</strong></td>
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<tr>
<td>I believe information from MTP</td>
<td>0.951</td>
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<tr>
<td>I trust MTP</td>
<td>0.949</td>
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<td></td>
</tr>
<tr>
<td>I prefer to transact with MTP</td>
<td>0.844</td>
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</table>
The second factor is composed of four variables closely related to the continuity of relationship with very high loading and reliability. The first three variables “trading partner plans to continue business in future”, “trading partner often meets my needs”, and “trading partner believes long term relationships reduce risk and uncertainty” have very high correlations within this factor. The factor has a high level of reliability with a Cronbach’s alpha value of 0.927 and explains 18.524 percent of total variance. The continuity of the relationship is also influenced by the degree of interdependence between farmers and their preferred farm produce buyers. Similar results have been observed by Batt and Wilson (2001) in the relationship between wineries and grape growers in Western Australia but the major factors at play were increasing cost effectiveness and reduction of relationship risk.

Factor Three is characterised by items that closely relate to financial issues. The first three variables “trading partner offers the best price”, “trading partner provides a financial solution”, and “trading partner does not mind paying extra cost” are clearly about the financial relationships in the supply chain. The last variable in this factor “always gives me market information” while a communication issue but it is closely linked to financial arrangements. This factor is also reliable with a Cronbach’s alpha value of 0.824 and explains 18.413 percent of total variance. Buyer-seller relationships can be maintained if both parties feel that the price offer is the best available – financial influence. Paun (1997) proposed that in good relationships there were usually easily resolved pricing problems, while Simpson and Wren (1997) positioned pricing as one of the major issues in the wood products industry.

Factor Four captured all items relating to trust such as “I believe information provided by my major trading partner”, “I trust my partner” and “I prefer to transact with my partner”. The last item signifies a high level of trust and is actually closer to commitment to the relationship. This factor is also reliable with a Cronbach’s alpha value of 0.814 and explains 14.668 percent of total variance. Good relationships can be maintained if supply chain participants trust each other. Trust has been defined by Moorman et al (1993) as the willingness to rely on an exchange partner in whom one has confidence. A number of authors (Batt, 2003; Heide, 1994) have found that when trust exists between buyers and sellers then long-term relationships can be established with limited risk because each party is expected not to use their power to the detriment of the other. Trust is considered as a governance
mechanism that mitigates opportunism in exchange transactions characterised by uncertainty and dependence.

Factor Five is defined by two variables “solve problems together” and “I am free to choose another partner”. This factor has been labelled “Cooperation”. The second variable is closer to freedom than to cooperation issue. However, the freedom here is a product of commitment between partners to convenient the relationship. While this factor suggests lack of cooperation it also suggests that there is openness between trading partners. Even though this factor only explains 8.288 percent of total variance with a moderate reliability as indicated by the Cronbach’s alpha value of 0.657, it is considered important in explaining buyer-seller relationships within the supply chains. This study is in line with a number of others (Morgan and Hunt, 1994; Lewin and Johnston, 1997; Cannon et al., 1999) that have argued that cooperation - coordinated actions initiated by one of the partner to gain mutual benefit - is the crucial factor promoting relationship and marketing success.

In summary, five factors were found to influence buyer-seller relationships in dryland farming supply chains in Lombok - the quality of the relationship, continuity of the relationship, financial issues, trust and degree of cooperation. The research has also found that there is significant level of agreement between dryland farmers and their intermediaries. This is probably because both parties realise that good relationships could provide mutual benefit to each of them and be a positive influence on future transactions (Hewett et al., 2002).

**Conclusion**

This study has found that the agribusiness supply chains associated with dryland farming systems on Lombok are still very traditional. The buyer-seller relationships within the studied supply chains are therefore highly influenced by the socio-cultural structure of the village community. By identifying five significant factors among the buyer-seller relationship, this study has provided the basis for guiding new policies that will improve the performance of the studied supply chains. Policy makers must consider that any intervention must recognise the traditional cultural values, which make the supply chain work as it does. Without this recognition supply chains may fail or at best may lead to conflict between trading partners. On the other side it may be that provision of more market information in the supply chain may lead to instability in relationships especially if currently there a lack of transparency in the relationship and buyers are using their greater access to information as a means of obtaining advantage.

A possible intervention that could be adopted is that agricultural advisors, especially in subdistrict and village level, could facilitate regular meetings of both farmers and buyers to discuss the differences between the traditional ways and modern business culture. This must be conducted very carefully in order not to ensure that there is no offence to either of the parties.
The aim of such an intervention would be to improve the supply chain’s performance through slowly introducing modern business activities. For example, ensuring that terms of trade are agreed formally between parties and that there is transparency in the business relationship.

References


