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BANANA SUPPLY CHAINS IN INDONESIA AND AUSTRALIA: SURVIVING ISOLATION FROM END MARKETS

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Abstract

Two banana supply chains (BSC), one in Indonesia (BSC1) and one in Australia (BSC2), are described based on case study research conducted in 2002. BSC1 sources bananas from small farmers for distribution through traditional markets in Jakarta. BSC2 includes farmers supplying to both major and independent retailers in Sydney through a wholesale agency with some farmer ownership. Farmers in both chains live in relative isolation from the main markets for their bananas. Prices for their bananas depend on the market prices in the city, upon which they have little control. This paper focuses on how farmers removed from key markets, deal with buyers to receive fair prices.

In both chains, most transactions between farmers and their buyers were completed through a fixed price mechanism with little bargaining effort from the farmers. Because of their relative isolation, farmers relied on the buyers to offer them fair prices that reflect market movements in the city. Farmers in BSC1 based their trust on traditional value systems and the competition to secure banana supply in the villages. In BSC2, farmers' trust in their agent developed over time in their relationships and by making comparisons between the prices farmers received for their bananas and the market information they have.

Key words: farmers, banana supply chain, isolation, trust.

Banana supply chains in Indonesia and Australia

Supply chains in developing countries are often considered by Western standards to be primitive, fragmented, and made of multi-layered systems, particularly at the village and regional levels (Heilbron and Larkin, 1995; Cheeseman *et al.*, 1995). This is true of BSC1, which comprises small farmers, collectors, and wholesalers at the upstream levels in three villages in the Bayah District (Lebak Regency in the Banten Province, West Java, Indonesia). The chain supplies local banana varieties to traditional markets in Jakarta through the Kramat Jati Central Market (PIKJ- Pasar Induk Kramat Jati) and several smaller central markets around Jakarta. Bananas form an important source of farmers' regular income as they can be harvested throughout the year. They are commonly grown with minimal input and attention from farmers on their rice banks or mixed with hardwood trees.

In BSC1, farmers sell their bananas either to collectors or directly to village wholesalers. Two selling methods exist, weight- and tree-based methods. In the former, banana bunches are carried on foot to the buyers' warehouses to be weighed and priced according to one of the buyers' standard four price groups. In the latter method, collectors actively search around the villages for young or mature bunches to be bought on the tree. While a fixed price system rules almost all transactions in the weight-based method, bargaining governs the transactions in the tree-based method. Most farmers and collectors sell to regular buyers and only occasionally to others. Competition among wholesalers ensures relatively fair prices to suppliers. Village wholesalers ripen the fruit, either with smokes or carbide, and wrap fragile and high value banana bunches with dry banana leaves before transporting them to PIKJ. Banana agents in PIKJ specialize only in bananas and sell on a 10% commission basis to traders from traditional markets who in turn, serve both vendors and end consumers. No formal grading standards exist within BSC1; bananas are graded somewhat differently at each level using subjective assessment of parameters such as bunch weight, maturity, finger length, and cosmetic appearance.

BSC2 centres on the banana wholesale agent in Sydney who links growers in North Queensland with buyers and controls the ripening process. Bananas, predominantly Cavendish, are sourced from specialized growers who produce high, good, and average quality bananas. Supply from small scale, average quality growers is discouraged. Most of the agent's suppliers are regular growers, who consistently supply to two or three wholesalers to spread their risk and obtain market information from different cities. Growers grade bananas by removing defective fingers that fall outside the product specification, and categorize the hands or clusters based on the finger length. They trust the agent to decide which customers their bananas should supply, based on assessment of the quality and consistency of the ripe fruit. The fruit is sold to major supermarket chains, both high quality and price sensitive independent retailers, and other wholesalers. Growers are paid on each consignment, several weeks after delivery to the agent. The characteristics of each chain are summarized in Table 1.

Table 1. Characteristics of BSC1 and BSC2

Characteristics	BSC1	BSC2
Distance between production area & markets	Approx 130 km.	Approx 2,600 km
Length of chain	3 levels at the upstream and at least 3 levels at the downstream.	1 level at the upstream and 3 levels at the downstream.
Production scale	Dominated by small farmers (owning < 100 banana trees).	A combination of small to big growers.
Selling units	Upstream: bunch. Downstream: bunch, hand, & finger.	Carton
Key functions • Production • Ripening • Grading • Assembly • Distribution • Retailing	 Farmers Village wholesalers, retailers Collectors, village wholesalers, agent, traders Collectors, village wholesalers, agent Agent, middle size traders Retailers (small traders/vendors)	 Farmers Agent, major chain Farmers, agent Agent, major chain's distribution centre Agent, major chain's distribution centre Retailers
Knowledge of other chain members	Upstream members do not know downstream members & vice versa (apart from village wholesalers and agents in the city).	Upstream members know the agent and some of the retailers.

Communication	Face to face between members at two connecting levels.	Mostly by phone between farmers and agent. Farmers occasionally visit the wholesale markets and some retailers. Face to face & phone between agent and buyers.
Credit ties	Upstream: buyers lend money to suppliers. Downstream: credit payment from regular customers to agent.	Credit payment from agent to farmers (consignment system).
Price mechanisms	Upstream: mostly fixed price in weight-based transactions; bargaining in tree-based transactions. Downstream: bargaining	Agent pays farmers based on bargaining results between him and buyers (farmers as price takers).

Farmers in both chains are removed from the key marketing decisions in cities. This paper focuses on how farmers deal with their banana buyers in these circumstances. For simplicity, discussion of BSC1 will incorporate only farmers who sell by weight, which has similarities to the consignment system used in BSC2. In both situations, buyers largely determine the prices offered to farmers, who seldom contest their decisions. (In the tree-based transactions in BSC1 transactions were completed only through bargaining where individual farmers have almost an equal say with the buyers in determining the prices they receive. These transactions will not be further discussed in this paper.)

Research methods

Bayah District is located in Indonesia's main banana production area. The three villages were selected on the recommendation of the Bayah Agricultural office, banana production statistics, and access to study their systems. They are representative of upstream banana chains in Indonesia. The Australian chain was selected based on its comparability with the Indonesian banana industry through consisting of small banana family-farms, its attempts to operate competitively and innovatively to survive in the industry, its supply to supermarkets (the most common retail outlet for Australians to buy bananas), and its willingness to provide access to its members.

Data were collected in a series of interviews with channel members and by observing them while working. Interviews and observation findings were transcribed and analysed with the assistance of NUD-IST (Non-numerical Unstructured Data Indexing, Searching, and Theorizing) software, which was useful in allowing theory to emerge from data (Richards and Richards, 1991). A summary of findings was verified by the chain members for accuracy.

Farming in isolation

Farmers in both chains are relatively isolated from the main markets where their bananas are sold. BSC1 farmers live only 130 km from Jakarta but due to poor road infrastructure travel time is approximately five hours. Telephone lines and market information services are absent and most farmers have never been to Jakarta because travelling is expensive. As a result, these farmers live in almost pure isolation from their bananas' end markets. Most BSC1 farmers were not aware of the multi level chains in which they are involved. Although some BSC2 farmers have visited the retailers that sell their bananas in Sydney, most could only do this occasionally due to the relatively high costs associated with travel. As a result, farmers feel detached from the marketing end of their chain. This isolation from the marketing of their product has often been used to justify farmers' position as price takers who are individually weak against the market forces they have to deal with, particularly in developing countries (Dhankar, 1995). Despite being price takers, the farmers in BSC1 and BSC2 were relatively happy with the prices they received from their buyers. How are farmers in these circumstances assured that they have received fair prices that reflect market prices in the end markets?

BSC1: Overcoming isolation through traditional value systems and competition

Farmers in BSC1 were unaware of who bought and consumed their bananas in the city. Many knew that their bananas were marketed in Jakarta but did not care about the detail as long as they could sell their bananas in the village and receive payment. This was a relatively easy task since buyers never refused to buy farmers' bananas, regardless of variation in quality or variety. Although they were isolated from the end markets and received almost non-negotiable prices for their bananas, farmers and collectors showed little concern about being exploited by their buyers. Their peace of mind was due to the traditional value systems held by the chain members in the villages and the competition between village buyers to secure bananas. Detailed interviews and observations confirmed that BSC1 chain members' relationships in the villages were characterized by traditional village values comprising of trust and peasant solidarity.

Most farmers chose to trust their buyers to act in the best interest (price wise) of both parties most of the time; farmers felt the act of bargaining risked being interpreted as lacking trust in the buyers' judgement. In other words, farmers tended to believe that most of the time they would receive fair prices according to market prices in the city and they could accept occasional delays, usually up to three weeks, in transmitting price increases. This was acceptable because the extra profit was needed by village buyers to cover losses they made during low banana price periods, and the overall small margins of banana trading operations in the villages. Farmers were paid cash for their bananas; consequently, buyers bore the risk of losses if prices dropped and returns were low on bananas bought on the basis of the previous week's prices (and their knowledge of banana price patterns).

The value of peasant solidarity among villagers holds that everybody has the right to earn money for their families. Cooperation is the basis of social interactions among villagers and bargaining to obtain more profit for one's self without considering the other party's needs and profit is deemed disrespectful to other's rights. Forcing wholesalers to buy bananas beyond their prices might cause losses for the wholesalers; in the long term this would disadvantage the farmers themselves. This created an acceptance among farmers of delays in enjoying price increases. Farmers favoured long-term sustainable relationships over short-term gains because bananas were seen as a means of providing secure and stable, rather than large, income. As members of the village community, buyers were also expected to respect farmers' right to earn money, hence offering fair prices.

Naturally, buyers might want to delay price increases in the villages for as long as possible without damaging their relationships with their farmers. However, the competition among collectors and village wholesalers to secure bananas, particularly during the dry seasons, forced them to match each other's prices constantly. Market price information could be obtained through informal talks with farmers who supplied other buyers, with village wholesalers or with truck drivers who regularly went to the central markets to deliver bananas. Such information provided a comparison for farmers against the prices they received and could be used to challenge the buyers to increase their prices, ensuring that farmers obtained fair prices reflecting demand in the city. Many farmers stated they did not consider it necessary to search for updated market information because of their trust in the buyers.

Another major barrier to bargaining effectively was farmers' lack of confidence in presenting their argument about deserving to be paid more than usual or more than others, given their lack of market information and experience relative to village wholesalers. Buyers' paternalistic attitudes in their relationships with farmers also made farmers reluctant to bargain in a straightforward manner. Such paternalistic attitudes stemmed from the villages' social stratification, which accorded wholesalers relatively high status. Similar status-based relationships were also found among the Madaymen farmers and middlemen in the Philippines (Russel, 1987). For some farmers, reluctance to bargain was further amplified by their indebtedness toward the buyers. Buyers provide both a guaranteed market for their bananas and credit to farmers whenever they need extra cash. The loans were given with generous terms, without interest and without an enforced repayment schedule. However, because most farmers borrowed money for their daily necessities rather than specifically for expenses related to banana production, many farmers did not consider these financial ties as preventing them from bargaining or even selling to other buyers if the regular buyer failed to meet their demanded prices. In practice however, farmers only switched if it did not incur extra transportation costs or energy for them to walk the extra distance to the other buyer's place.

Traditional value systems and competition to secure bananas in the villages resulted in farmers' satisfaction with the banana trading system in the villages and with their regular buyers, to whom they intend to continue selling. Such positive relationships were also found among the potato farmers in the Red River Delta in Vietnam and their buyers (Batt, 2003).

BSC2: Overcoming isolation through information and building of relationships

Unlike the farmers in BSC1, farmers in BSC2 were well aware of the existence of the chain in which they formed a part. In particular, growers who were the shareholders in the banana wholesale agency were also aware of the competition between their chain and other banana chains targeting the same markets in Sydney. Their awareness of the target markets and the end consumers of the chain assisted growers in matching their production with consumer demand.

In BSC2, the long distance between the production area and the markets means communication between growers and the agent is conducted mostly through regular phone calls. Growers in North Queensland reported two ways of avoiding being exploited because of their distance from the markets. These were by building trust through long-term relationships with the agent and equipping themselves with adequate market information. The inability to have face-to-face meetings increased the importance of trust in the relationships. Similarly, inability to monitor their bananas' condition (the ripeness stage which is a major quality factor affecting sales) prior to selling, increased the importance of growers' trust in the agent's capacity to handle and grade their bananas appropriately for specific buyers, which eventually would affect the prices received by growers. Most importantly, growers trusted the agent not to take most of the profit but to pay them 'fair prices that their bananas deserved'.

Good relationships were particularly critical to ensure a market for growers' bananas in times of over-supply. Further, good relationships over a long period of time also enabled both parties to be more open about exchanging ideas, more tolerant of each other, and decreased the risk of opportunistic behaviour. Because BSC2 aimed at supplying good quality bananas, the relationships also depended on the growers' ability to produce good quality bananas consistently, to continue being among the agent's hand-picked growers to ensure good price and profit.

Unlike BSC1, market information was critical for BSC2 farmers to verify the fairness of the prices offered to them by the agent, despite their trust in the agent. This explains the common practice among banana growers of selling consistently to two or three different agents - to ensure price competition among them, and to obtain market information based on at least two different sources. A grower of good-quality bananas whose fruit returned below the market price for a given time typically rang the agent and demanded an explanation. However, this was unlikely to result in a change in price. The most common bargaining technique used by growers was to stop sending bananas to the agent if they were not happy with the prices paid; the relationships usually resumed after the agent made a phone call to them.

Growers' best chances to negotiate higher prices were during the short supply period. Small farmers tended to be more price-sensitive because they needed the extra payment per carton to have a viable income. Small farmers could only attain higher prices by having premium quality bananas that were difficult for bigger farmers to match, because with bigger throughput they had less control over their production and packing processes compared to small farmers.

Implications and further study

While the supply chain cases reported in this paper differ widely in their features, both demonstrate that the presence of competition between buyers is critical to farmers obtaining good returns. Switching costs are high in BSC2 because of the time taken to build trust in new relationships; consequently, farmers manage their risks (investment, securing markets, receiving fair prices) by supplying consistently to two or three agents. In contrast, the costs of switching in BSC1 are relatively low because of the trust in any farmer-buyer relationship due to the socio-cultural structure of the village community. This trust, combined with the low production costs and the guaranteed market for bananas, results in farmers' confidence in their capacity for one-off selling or shifting permanently to other buyers. Such ease of switching between buyers is not consistent with attaining chain integration and interdependency. By comparison, improving quality has the potential to benefit both farmers and buyers in each of the chains, and has more potential to promote interdependency and to ensure markets for the fruit. Interdependency between farmers and buyers should contribute to farmers sharing any increase in value developed by the chain.

This paper focused particularly on how farmers removed from the city-based markets survive their isolation and manage their relationships with buyers. It is part of a larger study on the role of bargaining in causing conflict or promoting interdependency between chain members. It seeks to investigate the suitability of bargaining as an indicator of chain members' capacity to exert power, in a range of banana supply chains in Indonesia and Australia.

References

Batt, Peter J. (2003). Cooperatives: Issues and Trends in Developing Countries. ACIAR seminar. Perth. March 24.

Cheeseman, N., Jolly, H., Smith, K., Wilkinson, M. and Breddin, R. (1995). Food Retailing in East Asia and Australia: Emerging Opportunities for Agribusiness. Queensland Department of Primary Industries, Brisbane.

Dhankar, G. H. (1995). Developing Assembly, Wholesale and Retail Marketing Network in Asian Countries: Experiences and Lessons Learnt. *Agricultural Marketing* 38(1): 7-17.

Heilbron, S. and Roberts, F. (1995). Agribusiness Structures: Vertical Coordination in Australia and Internationally. Rural Industries Research & Development Corporation, Barton, ACT.

Richards, T. and Richards, L. (1991). The Nudist Qualitative Data Analysis System. *Qualitative Sociology* 14 : 307-324.

Russel, S. D. (1987). Middlemen and Moneylending: Relations of Exchange in A Highland Philippine Economy. *Journal of Anthropological Research* 43: 139-161.

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