

TRADITIONAL MARKET INSTITUTIONS AND COMPLEX EXCHANGE

Exploring Transition and Change in the Bangladesh Rice Market

CPD-CMI Working Paper 1

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Series Editors: *Mustafizur Rahman*, Executive Director, CPD and *Arne Wiig*, Senior Researcher and Coordinator, Poverty Dynamics, CMI

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1. INTRODUCTION

The paddy-rice market is the largest market in Bangladesh catering to a population of 150 million, channelling essential staples from far-flung growers in surplus areas to densely populated urban centres and deficit rural areas. In order to execute this task efficiently, the market must be able to address the problem of complex exchange defined as non-face-to-face exchange involving spatial and/or temporal arbitrage, frequently involving credit. The market meets this challenge through some endogenously generated informal mechanisms using a chain of intermediaries to solve a variety of issues related to information and transaction costs including problems of asymmetric information, adverse selection and moral hazards.¹ Market roles that are of special interest relate to: (a) reduction of information and transaction costs; (b) enabling low-cost contract enforcement and dispute resolution; and (c) the role of norms and trust.

This study explores the hitherto unaddressed question of how the large, complex paddy-rice market in Bangladesh is able to solve the problem of complex exchange, faced in particular by the dominant actors in the market who face the most complex trading risks. It adopts a New Institutional Economics (NIE) framework to explore agency issues in exchange resolved by intermediaries, and points to norms and trusts within trading networks that underpin these. The study notes significant but opposing trends in different areas, particularly in terms of market structure and trade circuits.

A major focus of this paper is to explore changes in the paddy-rice market operation dynamics over a twenty year period in terms of structure, trade circuits, actors, roles, institutions and exchange relations. It also presents an opportunity to assess whether the nature of complex exchange and its institutional resolution has altered over time. In terms of exchange relations, a sharp decline in tied transactions was found, making exchange less personalised compared to twenty years ago.

The study draws heavily on the definitive work of Crow and Murshid (1994)² which lays the descriptive analytical basis of the rice market as it existed in two contrasting areas of Bangladesh in the late 1980s. This provided the comparative basis for the fieldwork conducted by the author in 2008 (with a selective follow up in 2010) in the same sample area used for the Crow and Murshid (1994) study.

2. THEORETICAL AND EMPIRICAL LITERATURE: A BRIEF REVIEW

2.1 Conceptualising Markets

The 'ideal' market is best thought to be approached by impersonal markets frequently associated with those in advanced economies (for example, see North 1990, 1998; Platteau 1994a, 1994b; Kumar and Matsusaka 2009; also see Murshid 1997 who disputes Platteau's position on the need for generalised morality). North (1990, 1998) argues that the rise and

¹These problems will need to be overcome by market institutions if complex exchange is to take place (Stiglitz 1993, 1994; Von Pischke 1991; De Meza and Webb 1992; Harris and Raviv 1979).

²Also see Crow (2001).

sustainability of impersonal exchange in advanced economies is based on both internal and external institutions (rules, norms, values) where the legal framework and a constant threat of enforcement are seen to be critical. In addition, internally generated social and market values (honesty, fairness, reliability) play a critical role. These value-based approaches provide private internal institutions less costly solutions compared to the externally imposed ones (Goodenough and Cheney 2008). Thus, one way of looking at transformation and change in market systems would be to focus on the nature of exchange relations in the expectation that these will entail a shift towards impersonal exchange, as both internal and external institutions mature and strengthen.

Intermediation and Agency

In complex markets, the role of intermediaries is to remove the risks associated with transactions between strangers, in effect acting as trust intermediaries. In addition, rating agencies, third-party inspectors and insurance agencies provide information and play a risk reducing role intended to encourage stranger-transactions.

The role of intermediaries may be viewed through the lens of transaction cost and agency theory. Intermediaries are able to address a host of transaction costs and agency problems that allow complex exchange to take place. In long distance trade (often involving short-term credit), for example, exchange requires information on quality and price along with security of transactions, knowledge of credit risk posed by trading partners, transport and handling arrangements, and so on. Much of this information is hidden or costly to generate directly, creating a niche for specialist market agents or intermediaries to develop who can address these more efficiently and at lower cost.

Thus, for example, quality of rice can be observed at the farm-gate and it is possible for the miller or 'principal' to go there to physically verify it. However, in order to reduce transaction costs, he hires others to do this for him. As a result of this decision, an agency problem emerges.

The intermediary may be as informed as the farmer so between them there is no hidden information or agency problem (or at least it is much less). However, as the miller does not have the correct information, there is a problem of asymmetric information between the miller and the intermediary. Thus, the trade-off or choice confronted by the miller is between a contract where the intermediary has incentive to reveal the hidden information, or costs of collecting the information himself. The ultimate decision actually depends on the lower-cost alternative. Similarly, the intermediary may face a similar choice between procuring directly or from a lower-order intermediary, and so on.

Building Trust and Norms

Trust-based institutions generally evolve through the efforts of participants in long-term and repeated market exchange environments. These allow the traders an opportunity to establish a reputation of reliability, making transactions less costly and more stable than would be the case otherwise. Thus, in a game of 'Snatch,' where traders face a choice between snatch and trade given a one-off exchange (for example, buy now and pay later),

the result, almost always, is snatch (that is never pay), preventing a market from developing (Schwab and Ostrom 2008). Once some simple norms are introduced, exchange is enabled as people are found to trust one another more frequently than theoretically predicted (Camerer 2003; Ostrom and Walker 2003).

Various modifications of the Snatch game have been demonstrated to show that different (more desirable) equilibria are possible. One possibility is that players adopt norms that lead them to derive utility from self-consciously avoiding snatch. Crawford and Ostrom (2005) model this as a delta (δ) parameter (warm glow), which if large enough, can offset the utility from snatch, leading to a new Nash equilibrium that supports exchange. This may be an appropriate way to model exchange in close-knit societies with repeated interactions amongst members belonging to the same community or social network where trust is highly personalised (Clark 1994; Chalfin 2004).³

A second possibility is that players develop a reputation for fair play over time. There is enough evidence to show that reputation effects play a critical role in decision regarding with whom to trade (Colson 1974; Sally 2002). It is believed however, that for reputation to lead to trust, institutions are needed that are able to verify and disseminate information on reputation quickly, reliably and cheaply in the market. Reputation, trust and reciprocity provide a strong inter-active concoction that can sustain exchange and make snatching costly (Schwab and Ostrom 2008), and it can even lead to norms supporting 'generalised morality' (or multilateral trust that supports impersonal exchange) in the long-run (Platteau 1994a, 1994b).

External Incentives

Contract law endows with an external incentive to behave correctly providing additional assurance that the risks of trading will be small. This happens in three ways: (i) through remedy for breach of promise; (ii) through flexibility of contract law to allow parties to structure provisions to reflect specific concerns (for example, with regard to grades or standards); and (iii) through support to existing norms (O'Hara 2008).

Another alternative is the establishment of law and order by creating a new position in the community with the power of sanctioning opportunistic behaviour. As long as the sanction involves a loss of utility that is larger than the expected gain from snatching, a Nash equilibrium favourable to exchange is established (Ostrom 2005). In traditional markets, endogenously created trader associations often play this role (Lyon and Porter 2009), while in advanced markets, this is the role of the formal legal system. However, passing and enforcing rules, especially formal ones involve large costs, thus reiterates the importance of endogenous solutions in less developed contexts. Thus, any functioning system that has evolved its own rules and norms, are intended to generate trust. The role of external interventions should be to complement, not to substitute these processes, as ill-considered moves to re-align incentives have been widely accused of having adverse, unintended effects (Schwab and Ostrom 2008). For example, experience from common pool resource

³'Warm glow' is likely to be more easily generated in a close-knit community compared for example, to an ethnically or racially divided society.

situations reveal that external interventions that are grounded with participatory, inclusive approaches are more likely to succeed than those that are imposed without direct consultations (Cardenas *et al.* 2000; Janssen *et al.* 2006).

2.2 The Empirical Literature

Analysis of agricultural markets and institutions have tended to focus on foodgrains and commodity markets where the major concerns have been with efficiency and equity. The initial phase of this research consisted of ‘mapping’ market structures, and identifying the role of marketing agents and market conditions along with the supply chain (prices, margins). It was rooted in at least two broader strands of the market literature: (i) the structure-conduct-performance literature (Bain 1959; Farruk 1970; Baulch *et al.* 1998); and (ii) the literature on transaction cost economics, coordination and institutions (Arrow 1969; Williamson 1975; North 1981). There was a third strand invoking the social capital, trust, norms and reputation as a determinant of traditional market performance (Abbot 1962; Van der Laan 1975). This work, combined with the transaction cost approach, gave rise to renewed interest in field-based analysis of traditional market performance in the 1990s, for example, the work on contracts, transaction costs and social capital in African markets (Fafchamps 2004; Reardon and Timmer 2005).

The findings from the applied literature yielded two contrasting views. One strand suggested that traditional market intermediaries were efficient, with little evidence of exploitative monopsony. Marketing intermediaries in peasant markets were not earning super profits, and the high trader margins reported reflection of various constraints and costs of trade (Bauer 1957) which were later referred to as ‘transaction costs.’ This stream of thought later gave rise to the work on transaction costs in trade circuits, such as the work of Fafchamps (2004), Kopicki *et al.* (2004) and Escobal (2005).

The other strand presented evidence of ‘structural and institutional features of intermediation’ (Reardon and Timmer 2005) that tended to generate monopsony or oligopsony in the trade, resulting in depressed prices for producers or high consumer prices. Studies representing this school of thought include the works of Wharton (1962), Mears (1957), Harriss (1979), Crow and Murshid (1994). These works generally emphasis ‘complexity’ in describing exchange relations and institutional arrangements, arising from the difficulty of reducing what appears to be numerous exchange relationships between a large number of diverse market actors, offering and receiving a wide range of exchange terms, frequently involving various tying conditions or inter-locking markets (Olsen 1999; Crow 2001; Harriss-White 1997, 1999, 2008). While this literature has advanced the understanding of institutional underpinnings of agricultural markets in the context of a complex development, the emanated policy conclusions that have remained weak, generally reinforcing the popular image of the rich landlord or trader controlling prices and terms of exchange locally, at the expense of poor producers or traders.⁴

⁴For example, Crow (2001) concludes, “Structure of grain and finance markets assists accumulation by the rich and the dispossession of the poor.” Others (such as, Bharadwaj 1974; Bhaduri 1983, 1986) point to coercion or forced commercialisation of small farmers to participate in the market as a disadvantage.

The present study explores how agricultural markets in Bangladesh and possibly in much of South Asia or Africa, despite the apparent complexity, confusion and chaos, have solved the problems of complex exchange (encompassing the information, transaction costs and agency issues) very elegantly and simply, through the abiding institution of the *aratdari*.

Similar institutions have been reported from elsewhere, including the *mandis* in Northern India (whose origins are likely to be similar but their roles have diverged due to different historical trajectories), and the commission agents of Nigeria (Lyon and Porter 2009). Interesting historical parallels have also been reported, for example, in Qing dynasty China, prior to the Industrial Revolution. Mann (1987) reports the existence of licensed brokers who ‘earned commission for supervising payments between buyers and sellers, overseeing delivery, inspecting for quality and quantity, and serving as a guarantor on the exchange.’ This could easily have been a description of the role of the Bangladeshi rice-paddy *aratdar* today. The absence of similar constructs, for example in Madagascar, has been noted to seriously constrain complex transactions (Fafchamps and Minten 1999).

This study is also a rare exploration of changes in market conditions over time, pointing to the ability of market institutions to adapt and change to take these dynamics into account. Section 3 of this paper briefly describes the fieldwork methodology which include repeated field trips and in-depth case studies of growers, processors, brokers and traders. Section 4 represents the heart of the paper describing the changing market structure and trade circuits, nature of exchange relations of different traders and growers, and the decline of tied transactions. Section 5 looks into the market-wide constructs and norms including social capital formation, role of trade bodies and technology that underpin the systems of trade. Section 6 concludes with a discussion of the factors behind the observed changes reported earlier in the Section 4.

3. METHODOLOGICAL NOTE

Rich case study materials examined for this study had a particular focus on market institutions and transactions, from a number of markets previously studied by Crow and Murshid in 1989, in the districts of Bogra and Noakhali, and in the capital, Dhaka. Bogra is located in the green revolution belt (advanced area); much of Noakhali consists of low-lying, mono-cropped, *char* areas (backward area); and Dhaka markets cater to the demand of a densely populated metropolis. Table 1 presents a broad characterisation of study areas/markets.

Table 1: Characterisation of Market Sites

Site	Type of Hinterland	Food Surplus/Deficit	Growth	Change between 1989 and 2010
Dhaka	Large, urban centre, rapidly growing population	Deficit; consuming area	Rapid growth in demand	From one central market to many decentralised ones
Bogra	Green revolution, ‘advanced area’	Surplus food production area	Rapid increase in food production, mainly hybrid rice	Rapid increase in modern milling; need to broaden procurement area of paddy
Noakhali	Mono-cropped, ‘backward area’	Deficit area	Shift to hybrid rice production – some growth	Local oligopoly no longer seen; rise of automatic mills; distress sale by growers reduced

Source: Based on Crow and Murshid (1994) and author’s field survey, 2008.

The field evidences were collected based on detailed, semi-structured, open-ended interviews involving different categories of market participants, including *araddars*, traders and millers. A total of almost 200 in-depth interviews were conducted, and repeated during a second round. The first round was conducted in May-June 2008, coinciding with the harvest period of the main rice crop, Boro. The second round was conducted in the lean agricultural season of August-September of the same year. A third round of more structured interviews was conducted in June-July 2010 on a sub-sample of 35 traders, each from Bogra and Noakhali, especially focusing on transactions and trading relations.⁵

Issues explicitly discussed with traders include entry history of the firms, changes in trading partners over time, how trading linkages were established, communications and introduction to use of mobile phones, changes in sale and purchase patterns, use of cash, credit and introduction to bank transactions, whether trading partners are fixed or not, use of *dadon* or tied credit, quality and weight issues, problems of risk and default, and transport arrangements.

3.1 Sampling Technique

Fixed premise traders and millers were selected on the basis of consultations with *samiti* officials who also served to introduce the researchers to the respondents. The officials were told that the sample markets of the Crow and Murshid (1994) study were being revisited after twenty years to find out what changes had taken place.⁶ Their advice of respondents (request to include both large and small firms as locally understood) was accepted.

Itinerant traders were selected arbitrarily on the basis of their availability at the time of the field visits. No attempt was made to be statistically representative due to the difficulty of putting together a sample frame for any meaningful level of aggregation (for example, district or region).

Resources for data collection are generally constrained, and there is a well-known trade-off between coverage and depth. This study, however, had the advantage of being able to build on the Crow and Murshid work of 1994, and thus able to cover a somewhat larger sample using the 'greater understanding of what to look for' that is already provided by their detailed investigation (Crow 1999).

4. CHANGING CONTRASTS: 1989-2008

4.1 Market Structure and Intermediaries

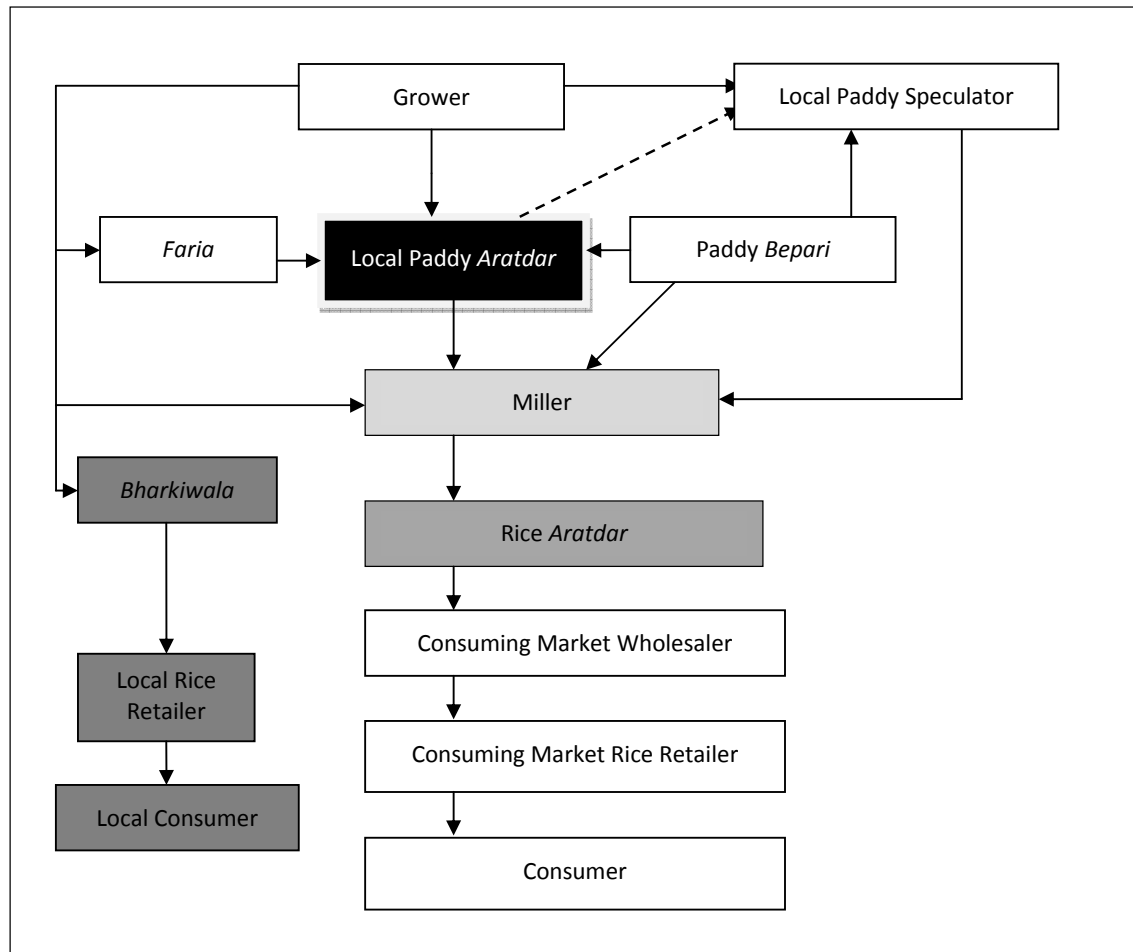
The market for agricultural produce can be thought of comprising two kinds of circuits: (a) a simple local circuit catering to localised demand; and (b) a more complex long distance circuit that connects local supplies to distant markets. Trade basically revolves around spatial arbitrage although some degree of temporal arbitrage also exists, especially when commodities are storable.

⁵Annex Table 1 provides a distribution of sampled respondents.

⁶Senior *samiti* officials were able to recall the earlier Crow and Murshid fieldwork conducted in 1989.

Typically, the market consists of a number of essential intermediation roles carried out by numerous specialised agents. It is important to bear in mind that while different names are used to denote different agents and their functions, there are a number of overlapping functions carried out by the same agent as well as the use of different local names to refer to the same or similar functions that sometimes lead to confusion. Figure 1 shows a generic representation of the paddy-rice trade circuit in Bangladesh.

Figure 1: Paddy-Rice Trade Circuit



Source: Author's field survey (2008).

Note: Shaded boxes pinpoint changes in importance of role over time: the decline in traditional milling (dark-grey); the rise of modern milling (light grey); the ebb-flow of paddy *aratdars* (re-emergence in Bogra and decline in Noakhali) – black; and the growing importance of rice *aratdars* (medium grey).

The most common types of intermediaries referred in the vernacular are *faria*, *bepari*, *aratdar* and *paikar*. In addition, there are various local names in different regions of the country such as *cycle bepari*, *kanda bepari*, *bharkiwala* and *lai faria*. Things are further complicated by changing roles of some intermediaries with time, although the names remain unchanged. The various types of intermediaries are defined below:

- *Faria*: Itinerant trader operating at local village markets procuring supplies from growers, and selling to *beparis* locally.

- *Bepari*: Also an itinerant trader who trades long distance collecting from *farias* and growers, carrying out some sorting, grading and bulking, and connecting to an *aratdar*.
- *Aratdar*: A broker or commission agent operating from fixed premises, who links *beparis* with buyers (other *beparis*, millers or processors, *paikars* or even retailers). While the pure function of the *aratdar* is that of a commission-based broker, he is also known to wear other hats as well, sometimes combining brokerage with direct trading.
- *Paikar*: A wholesale buyer purchasing directly from an *aratdar* or using a *bepari* to buy on his behalf.
- Retailer: Procures supplies from a *bepari* or a *paikar*.
- Processor: In addition to modern semi-automatic and automatic mills, there are traditional, small-scale paddy processors (e.g. *bharkiwala*) who procure paddy from growers and use family labour to dry and parboil the paddy before milling.

The local paddy circuit is shown on the left (Figure 1) where the main actor is the traditional micro-processor (*bharkiwala*). The top right-hand corner shows the paddy speculator, that is people with some surplus funds undertaking speculative seasonal trading. The other segments of the market are self-explanatory involving milling, the role of paddy and rice *aratdars*, and retailing.

4.2 Trade Circuits: Changing Contrasts

4.2.1 The Paddy Circuit

It has been interesting to explore how trade circuits and market structure have changed over time, and how this in turn, is related to changing incentives facing market actors. The paddy *aratdar* (black box in Figure 1) was not even reported from the advanced area (Bogra) in Crow and Murshid (1994) as it played a minor role then. Millers often procured paddy directly from the growers as kind loans to be paid later in cash at highest market price.⁷ Today, the main flow of paddy to the millers is through paddy *aratdars* and *beparis*, accounting for 80-90 per cent of supplies.

Competition has increased manifold among millers in Bogra. In 1990, there were 100 semi-automatic mills rising to 550 in 2009, including seven automatic mills, generating considerable demand for paddy. Paddy has to be sourced now from a much wider area, and from distant production centres. This was the perfect setting for the paddy *aratdar* to re-emerge in Bogra, in the face of changing costs imposed by distance and risk. In fact, the paddy circuit of advanced area has increasingly come to resemble that of the backward area chain of twenty years ago.

In contrast, the function of paddy *aratdars* have declined in the backward area, prompting one of the few who are left to observe: “No new traders enter the paddy *aratdari* business – rather, most have left because millers buy directly from the growers and *beparis*” (*Eklas Miah* of M/S Eklas Miah Enterprise, interviewed in Noakhali on 26 July 2010).

⁷See, Crow and Murshid (1994).

Twenty years ago, the paddy *aratdars* in Noakhali were charged with the job of procuring supplies either from outside districts or from the *chars*. While in terms of distance, the *chars* were not far away from the market town, access was difficult due to poor roads. Moreover, these were often newly settled areas with loosely organised communities, representing greater risks in exchange, especially when it came to trade with outside entities. It was under these circumstances that paddy *aratdari* proliferated at the time. These conditions have now changed with better infrastructure, communications and the advent of large automatic mills deep inside the *chars*.

4.2.2 The Milling Sector

Major changes have occurred in the milling sector of both study areas, as the entire traditional milling system consisting of a host of micro-processors dramatically reduced (medium grey boxes in Figure 1). Older technologies of husking mills, boiler-operated mills and shallow-engine run mills⁸ are in decline, with fully automatic mills rapidly taking over. These changes have been particularly notable in Noakhali where a total of 20 large mills (including three in the *chars*) now account for over 90 per cent of the market. In Bogra, the milling capacity is more evenly spread across different technologies.

The introduction of automatic mills has altered incentives for traders in a number of ways. Weighing and bagging are now done using modern techniques. The quality of the produced grain is standardised, and it does not matter due to weather, as drying is automatic. Concerns regarding colour, quality and weight of rice that were once important have now become largely irrelevant. This also means that price negotiations is better informed.

4.2.3 The Rice Circuit

The rice part of the circuit has remained unchanged over time with the role of the rice *aratdar* becoming even more important. The rapid expansion of milling capacity has resulted in intense competition among millers to sell, and this has strengthened the role of the rice *aratdar* whose numbers failed to grow in the same proportion, due to strong entry constraints.⁹ There are signs of vertical integration of rice *aratdars* in the Bogra market where 20 out of 30 rice *aratdars* have also become automatic mill owners, fully equipped with rice sorting machines, and even trucks and transport vehicles.

4.3 Decline in Tied Transactions

Twenty years ago, larger farmers were able to obtain a 'free' (untied) market price for their produce in open, face-to-face transactions, but small and marginal farmers were often tied into credit-based relations requiring them to surrender a part of the produce at a significantly lower price than prevalent in the market. Poorer growers were often found to accept cash advances from traders, millers or their agents which had to be repaid after harvest at a low price. At the same time, surplus farmers were known to provide credit in kind to the traders or millers which had to be repaid in cash at the end of the season, i.e. at

⁸ Mills run by engines borrowed from shallow tube-wells used for irrigation.

⁹ It takes many years for *aratdars* to set up a network and earn a reputation in the market.

the highest price of the season. The former was widespread especially in the (backward rice-deficit) *chars* of Noakhali, while the latter was well-known in (rice surplus) Bogra.¹⁰

Various types of tied transactions have been well-documented in the literature on paddy-rice markets, but are certainly not restricted to that market alone (Crow and Murshid 1994; Olsen 1999). The objective of tying loans is to improve the returns of one party (the dominant or lending party) at the expense of the other, or to transfer risk, in the context of a given transaction. The main forms of these tying loans are given below:

- a. *Dhaner upore*: where cash is given in advance to the peasants by trading intermediaries before harvest; to be repaid partly in cash (usually the principal) and in kind (interest) at harvest at an agreed (higher than market) rate.
- b. *Trader-dadon*: working capital advanced in cash by higher-order traders to a subordinate trader (typically by an *aratdar* to a *bepari*) on the condition that the subordinate trader must trade exclusively with the higher-order trader until such time as the advance is repaid.
- c. Credit in kind advanced by surplus peasants to traders, processors or other peasants to be repaid in cash at the highest price of the season.
- d. Short-term *paikari baki* (trade credit) amongst traders that serves to promote client loyalty or signal trustworthiness.
- e. Loans in kind from shopkeepers, millers or rich peasants to poor peasants, repaid in kind or cash.

With the exception of *paikari baki*, a rate of interest is implicitly charged in all tying transactions (Table 2).

Table 2: Different Types of Financial Relations in the Backward Area Paddy Market

Type	Parties	Loan Amount (Tk.)*	Terms (Implicit Interest Rate)
<i>Dhaner Upore</i> (money on paddy)	Sub-trader to poor peasant	Usually 1,000-3,000	Cash for paddy at harvest (100-180 per cent). In recent years, repayment schedule has changed into cash (for principal) and kind (for interest)
<i>Dadon</i>	Big trader to small	15,000-100,000	All the small traders' procurement promised to the big
Advance Purchase	Trader to peasant	1,000-3,000	Cash loan for paddy at harvest (very high)
Paddy loans	Big grower to trader	1,000-50,000	Paddy loan repaid in cash at above market price

Source: Based on Crow and Murshid (1994) and updated by author.

Note: These financial relations were reported twenty years ago by Crow and Murshid and have since declined dramatically.

*Tk. refers to the Bangladesh currency unit, Taka; Tk. 70 = 1 USD, in 2010.

Tied exchanges allow the dominant party to by-pass the market and derive superior terms. However, tied exchanges are also risky as there is an incentive for borrowers to renege if possible. The risk can be addressed in two ways: (i) having better information on borrowers' characteristics; and (ii) countervailing power at the local level to ensure repayment. Thus,

¹⁰These areas are described in detail in Crow and Murshid (1994) and Crow (1999).

for exchanges like *dhaner upore* to be credibly conducted, the distant lender must engage an influential local agent who is better informed and can ensure repayment.

So, the question is, what binds the local agent to the higher-order trader or lender. This relationship is similar to *dadon* that binds subordinate traders to superior ones. The main glue is trust, borne out of a history of successful repeated transactions bolstered by an element of threat. There is a clear market norm, ‘a subordinate must trade only with his principal as long as he remains indebted to him.’ No other trader in a given market area will engage in any exchange with a tied trader. Clearly, the relevant information of different traders in a market and their tied subordinates or agents become public knowledge quite quickly. Under the circumstances, agents have little choice than to play by the rules.

A majority of peasants in the backward area were reported by Crow and Murshid (1994) to be tied to money-lenders in the past. This is no longer the case although it still persists, especially in more distant *chars*.¹¹ Hitherto subordinate traders and agents have now emerged as small, independent financiers at the local level. The ties with big traders and money-lenders have become weakened in the face of a much improved situation of availability of credit and finance (due to microcredit providing non-government organisations (NGOs) and remittances), and the demise of monopoly power of big traders and/or money-lenders reported earlier by Crow and Murshid (1994).¹² *Char* area *beparis* and paddy *aratdars* have also reported increased risk in lending to growers who often find excuses to delay payment or even renege, pointing to a changing balance of power in the area. Over time, however, particularly between the late 1980s and 2008, the implicit *dhaner upore* interest rate appears to have remained unchanged, attesting to its strong institutional rigidity (Table 3).

Table 3: Changes in the *Dhaner Upore* Rate over Time

Year	Implicit <i>Dhaner Upore</i> Price (Tk. per <i>maund</i>)	Market Price (Tk. per <i>maund</i>)	Loss to Grower (Per cent)
2008	417	600	30
2000	182	215	15
1989	143	200	29
1975	83	115	28
1972	20	67	70
1953	10	13	23

Source: Based on Crow and Murshid (1994) and updated by author.

In keeping with the general decline in tied exchange, trader *dadon* which used to be widespread in commodity markets across Bangladesh is no longer seen.¹³ Subordinate traders are no longer tied (for example, to millers or *aratdars*) but engage in voluntary trade

¹¹ Growers in *Char* WAPDA in Noakhali reported that 80 per cent of peasants were indebted through tied arrangements, mainly *dhaner upore* loans at Tk. 1,000 per *maund* (40 kg) plus principal to be paid in cash. Growers from *Char* Bata and *Char* Lakshmi however reported that these were no longer common, and “unless someone is in great difficulty, no one wants it” (*Chitto Ranjan* from *Char* Bata, interviewed on 30 July 2010).

¹² Both small traders and poor peasants in Noakhali have reported access to microcredit from a well-known NGO – ASA.

¹³ Less than 5 per cent of traders interviewed reported trader *dadon* in 2008.

with their principals. This leads to the question of how the dominant forms of trade (free exchange) is structured and sustained given the fact that *dadon* used to be a key mechanism adopted by major market actors to ensure supply at a low price.

4.4 Transactions in the Paddy-Rice Market

Market exchange requires that potential trading partners who are able to come together on the basis of good market information and enter into credible, binding contracts. Generally, initial transactions are small, but are gradually scaled up over time as a history of successful transactions are built up. Thus:

- a) Where parties do not know each other well enough, transactions are strictly on cash and face-to-face;
- b) Complex transactions require a successful track record, and use of a third-party agency as guarantor, typically played by the rice and paddy *aratdar*;
- c) *Aratdars*, therefore, need to develop a client-base or network of trusted trading partners;
- d) In tied exchange, credit is used to alter terms of trade in favour of the dominant party or principal;
- e) The use of intermediaries like the *aratdars* enables the principal to reduce agency costs that keep key information hidden or costly to generate directly, including information on price, quality and credit worthiness. Intermediaries can be avoided if the agency problem is solved more cheaply. Thus, large millers are sometimes able to tie up directly with growers or wholesalers through hired agents, but this is rare. The dominant mode is to procure or sell through *aratdars*.

4.4.1 Growers' Transactions

The grower primarily engages in transactions with the paddy *beparis and farias*. Transactions are in cash and at the farm-gate. Unlike in the past, when growers would go to the village market to sell, they are now able to sell directly from the farm-gate. There is strong competition among collecting traders, as growers are able to verify the market price easily with the help of mobile phones. In Bogra, growers used to sell on credit to the millers; but this practice is now rare as demand is high, and risk of credit default is significant. In Noakhali, the story is similar, cash sale at the farm-gate is the norm, and the practice of advance sale or *dhaner upore* is rarely seen. The use of weighing balances rather than the traditional basket has also gone in the growers' favour. Increased competition, better information (due to mobile phones) and easier access to microcredit from NGOs, and for Noakhali, remittances from abroad, have translated into better terms for growers.

4.4.2 Paddy Aratdars' Transactions

In Noakhali, role of local paddy *aratdars* have declined, being lost out to *beparis* for local supply and to distant *aratdars* for out-of-district supplies. In Bogra, paddy *aratdars* have re-emerged with the need to source supplies increasingly from further afield. In the former, transactions are in cash with no commission sales, while in the latter, commission sales dominate. They do not get advance from millers, indeed they are more likely to sell on

credit. Some advance payments to *beparis* have also been reported from Noakhali (but not from Bogra) serving to tie in supplies, but this accounts for no more than 25 per cent of total volume. Payments are made in cash through the banks. Thus, in Bogra, the paddy *aratdar* combines a bulking function with a brokerage function, while in Noakhali, the brokerage function has given way completely to the bulking function in the face of rapid transformation and expansion of the milling sector.

4.4.3 Rice Millers' Transactions

Millers buy paddy and sell rice both in cash and on credit. Most of the transactions are done on credit, especially when business agents live in distant areas. Cash transaction is 10 per cent, transaction through banks is 60 per cent, and on credit 30 per cent. If transactions are in cash, a discount of Tk. 5-10 is given to the buyer per *maund*. Transactions made on credit are settled within seven days, a facility given to *aratdars* who are regular clients. Problems of exchange that remain include supply of low quality paddy, delay in repayment, loss due to default by agents, and so forth. Rice (unlike paddy) is always sold through *aratdars* who bear the entire risk of transaction between millers and distant wholesalers/retailers.

4.4.4 Rice Aratdars' Transactions

The rice *aratdar* in Bogra is able to procure milled rice on credit as competition to sell is intense. Around 75-80 per cent of supplies are from semi-automatic and automatic mills, and orders are usually placed by mobile phone. At least 50 per cent of payments are made by bank transfers/online banking. Sales are made to non-local rice *beparis* and wholesalers in the network (75 per cent) and non-network members (25 per cent), the latter are not granted credit. In case of credit, 2-7 days are required to settle dues. Commission is Tk. 4-5 per *maund*.

In Noakhali, *aratdars* buy from automatic mills with 30-40 per cent of traded volumes taken on credit from regular suppliers. Purchases are paid through bank transfers/online banking as well as cash, while sales are conducted in cash mainly to local retailers (75 per cent). Since sales are local, no network is used unlike in the past when 25-30 per cent of sales went to fixed retailers in the *chars* with credit playing a big role. Twenty years ago, transactions with millers were on commission-basis which is no longer practiced.

The *aratdar* is mainly interested in turnover, especially when operating on commission. This requires a trusted client-base of suppliers and buyers. As part of his business strategy, trader *dadon* used to be rampant twenty years ago, but it has now reduced to a trickle in all major markets in Bangladesh. Verbal contracts have now entered into with free (untied) traders who have the option of doing business elsewhere if there is lack of trust. Thus, rice *aratdars* have to compete on the basis of the total quality of provided services to clients (including short-term credit, timely deliver and quality). In practice, trading partnerships once established, remain loyal, even if there are minor breaches in contract as it is difficult and time consuming to build new ones.

4.4.5 Rice Wholesalers' Transactions

Wholesalers are based in main consumption centres, procuring rice supplies from *aratdars* and sometimes directly from millers. There are no tied agents with the main strength of the business resting on reputation: suppliers of rice look for wholesalers who have a good reputation for regular payment and good price. Twenty years ago, it was common to keep a representative permanently posted in the supply region to ensure that the verbal contract was honoured. This practice has disappeared because of the easing of the supply situation, reduced concern with quality and weight, and the ability to maintain close contact with suppliers over mobile phones. Risks for wholesalers have declined although not disappeared.

More than 80 per cent of the surveyed wholesalers in Dhaka have reported incurring losses due to default. Retailers sometimes do not make payment on time; sometimes they leave the business without making repayment and cannot be traced.

4.4.6 Rice Retailers' Transactions

There are no tying arrangements, but generally, each retailer purchases from a few fixed wholesalers, whom they trust, and from whom they can purchase on credit. In Dhaka, business transaction is entirely on credit for purchase of rice from regular wholesalers living in or around the retail market. However, when rice is purchased from distant wholesalers, only 30-40 per cent can be purchased on credit, underscoring the increased problem of monitoring and risks associated with long distance trading.

Retail markets are more likely to see one-off transactions between unknown agents, opening up the possibility of 'snatch.' However, for a staple like rice, this is likely to be less problematic given widely available information and consumer familiarity.

Generally, the retail trade is yet to develop into a large, modern operation where branding or reputation-effects could come into play, for example, due to the rise of supermarkets and transformation of commodities into products.¹⁴

5. SUPPORTING CREDIBLE EXCHANGE: SOCIAL CAPITAL, TRADE BODIES AND TECHNOLOGY

Market-wide norms, culture, rules and institutions support credible and low-cost exchange. These relate to social capital, mechanisms for grievance resolution, security of transactions, information dissemination, and dealing with the police and 'authorities' – all designed to reduce default and lower transaction costs. In addition, credible exchange is facilitated by financing arrangements, insurance mechanisms, transport infrastructure and telecommunications.

¹⁴The distinction is made in terms of the extent of branding and product differentiation (Reardon and Timmer 2005).

5.1 Generating Social-Trade Capital

How difficult is it to establish trust between potential trading partners in a market? This is not as much of a problem in the local village market where information is readily available, and where transactions are made face-to-face. Even at this level, success in trading requires credit worthiness as otherwise capital constraints severely limit turnover. In larger markets or in long distance trade, this is absolutely crucial. Typical entry mechanisms are as follows:

- (a) Introduction: Those who are lucky will have the advantage of being introduced, referred or provided with a guarantee by a senior, more established trader. This serves as a good entry point enabling the entrant to gain a foothold on the lowest rung of the ladder.
- (b) 'We are related': A host of quasi kinship relationships are sought to be created with potential trading partners. Thus, the first task is to find common ground – a useful starting point is village home or permanent residence (for example, village, thana, upazila or even district). Then, depending on the socio-economic position of the traders, they will refer to each other as big brother, brother-in-law (*dula bhai*, *dharmer bhai* or *talto bhai*) and *mamu* (uncle). In addition, often instant rapport can be built through the use of regional dialects.
- (c) Join an established business as an apprentice, typically in a family firm or that of a close relative to develop trading skills and generate his own social networks.
- (d) Enter the trade as a *faria* or local *bepari* at the lowest rung of the chain, gradually working up the ladder through accumulation of capital and expansion of social networks.

The moot point is that the larger cultural-market context allows close pseudo-kinship relationships to emerge quite quickly, and from there, once initial transactions are successfully conducted, the stage is set for repeated transactions followed by more complex, sophisticated contracts.

5.2 Associations and Societies

Market associations are legal bodies representing all traders or a trader category operating in the market and paying a regular subscription. Associations usually have an elected body of office bearers, including a President, Secretary and Treasurer. A subscription is generally levied to cover basic operations (cleaning the premises, ensuring safety and security). A key role is to resolve disputes among traders (Lyon and Porter 2009).

Market associations have been known to build up a savings-credit fund from subscriptions to lend to members at favourable terms in the event of unexpected losses. The *aratdar samiti* in Bogra has imposed compulsory subscription charges on millers, truck-owners and on themselves in the wake of increasing insecurity and theft along transport routes, using the funds to compensate for up to 50 per cent of losses incurred. In general, the association will represent the collective and individual interest of its members – a function that larger, richer associations in the big, urban markets are better able to discharge. In this connection, a good working relationship with the police, key government officials, political party leaders and even local thugs must be cultivated to minimise extortion from organised rackets.

5.3 Technology, Infrastructure and Finance

5.3.1 Technology

Major changes have taken place in technology over the last twenty years, which have caused changes in the nature of agency role, reducing information asymmetry and transaction costs. Technological change has taken place on a number of fronts: (i) communication – the rapid expansion in mobile phone network and access (more than 90 per cent of the traders interviewed have mobile phones and everyone has access to one); (ii) milling – the rise of automatic rice mills that has set new standards and new tastes (quality and grades are uniformed, weighing and bagging process have been automated, and consumer preference for high-end quality product); and (iii) nature of production – shift to hybrid varieties of paddy which is well-suited to automatic and semi-automatic mills (displacing husking mills and *bharkiwalas*).

5.3.2 Infrastructure

A major reason behind the backwardness of the ‘backward area’ was its remote location and difficulty of access from the nearest market town in Noakhali. Investments in all-weather roads have improved physical communication leading to the establishment of mills and banks deep inside the *chars*.

5.3.3 Finance

Some major changes have taken place in financial markets. On the supply side, there has been a proliferation of microcredit organisations, branches of both public and private sector banks, and large inflows of remittances. In Noakhali, for example, almost every family has a member working abroad and sending back money periodically. This has meant that producers no longer depend much on distress borrowing or sales, and if credit is needed, it can be obtained locally. Similarly, traders and millers have much better access to trade credit from the formal banking sector which now holds excess liquidity.¹⁵ In addition, long distance or large transactions are invariably now done through bank transfers to minimise risk often using online banking facilities.

Thus, access to information is now literally at one’s finger tips. In particular, the rise of cellular phone access has revolutionised markets, as millers, traders and growers are able to talk to clients readily, and able to place orders over phone, reducing the need for face-to-face exchange. Quality, grades and weights are of lesser concern due to technological upgradation of milling. Credit is more readily available and large transactions are carried out at a distance through banks. Better communications has resulted in opening up backward markets and reducing agency problems, stimulating more direct trade. It has been noted how, in the face of these changing conditions, traders, especially *aratdars* have responded to re-shape market transactions and expand business.

¹⁵See, *Bangladesh Business News*, 30 November 2010, which reports excess liquidity in the banking sector at over USD 40 billion.

6. CONCLUDING REMARKS

Agricultural markets are apparently complex but basic exchange mechanisms are simple. The key institution in the market is the *aratdari* system which solves (or at least reduces) the agency problem faced by millers. Here, the miller is the principal who will need to procure paddy supplies from numerous small producers. If he has to undertake this task directly, he would need to hire dozens of agents, giving rise to serious monitoring issues. By going through an *aratdar* the principal is able to reduce costs and risks although he would still need to locate a dependable *aratdar*. This is easier to achieve, given that *aratdars* operate from fixed premises, are highly specialised, and have a reputation to defend. The *aratdar* himself is also a principal, and solves his own agency problem through personalised social-trade networks built up gradually. The wholesaler, in turn, is a principal (for retailers), but the network approach here appears less successful, probably due to greater monitoring difficulties.

Trust building and personalised transactions are crucial for successful execution of complex exchange, but this is essentially endogenous to the transaction although supportive external mechanisms (for example, mobile phones) were found to have had a salient impact. It would appear that rather than constrain markets, the *aratdari* system has in fact responded well to the (changing) nature of agency in both Noakhali and Bogra, helping to reduce cost and improve competitive outcomes. This way, market exchange has become much less tied, and therefore more equitable – features that are not consistent with the notion of monopoly rents or collusion.

Technology, infrastructure, mobile phones, remittances and credit markets have had a profound impact on the market, significantly reducing transactions and agency costs, making exchange simpler. In terms of information, the weakest link is between retailers-wholesalers in the rice trade where the potential for opportunistic behaviour remains significant.

Looking forward, there are three major policy challenges faced by the market: (i) default in payment which remains a significant problem; (ii) advent of modern food retail system (supermarkets) which could displace the traditional market, with strong implications for equity and livelihoods; and (iii) the issue of bio-security and food safety which the traditional market has failed to address adequately. The existence of the traditional, *aratdar*-centred market will depend on how well it responds to these challenges. Public policy should closely review how it can assist in this process.

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ANNEX

Annex Table 1: Sample Size by Market Actors and Market Centres

Market Actor	Dhaka (Urban Centre)	Bogra (Advanced Area)	Noakhali (Backward Area)
Grower	-	15 (5)	15 (5)
<i>Faria</i>	-	15 (5)	15 (5)
<i>Bepari</i>	-	15 (5)	15 (5)
Paddy and Rice <i>Aratdar</i>	15	15 (10)	15 (10)
Wholesaler	5	5	5
Retailer	10	10 (5)	10 (5)
Miller	5	5 (5)	5 (5)
Total	35	80 (35)	80 (35)

Source: Based on Crow and Murshid (1994) and author's field survey, 2008.

Note: Figures in parentheses refer to the third round of in-depth survey in Bogra and Noakhali in 2010.