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Historical divergence in public management of foodgrain systems in India and Bangladesh: Opportunities to enhance food security

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ABSTRACT

The Indian government is involved in almost every aspect of foodgrain procurement and distribution. Systemic inefficiencies and irregularities have slowed progress in achieving food security while programme expansion toward universality of coverage has important budgetary implications. Bangladesh offers a stark contrast with the reduced role of government in foodgrain distribution and highly targeted approach to the poor. With the Indian government's control of the foodgrain system undergoing an overhaul, this paper explores the evolution of foodgrain systems in India and Bangladesh in search of insights to improve system design and efficiency to enhance food security outcomes. The increasing role of markets, self-targeted programs, conditional programs and technological innovation in foodgrain supply management have been effective in reducing food insecurity in the region.

1. Introduction

The Indian government is involved in almost every aspect of foodgrain procurement and distribution. Systemic inefficiencies and irregularities in foodgrain procurement and leakages along the value chain have slowed progress in achieving food security (Jha et al., 2011).[1] India's movement towards universality of coverage will have significant budgetary implications. Bangladesh offers a stark contrast with the reduced role of government in foodgrain distribution and highly targeted approach to the poor. In both countries, price stabilization was at the core of the conceptualization of government involvement foodgrain procurement and distribution.

India and Bangladesh's food systems evolved from common origins and motivations. British India laid the administrative, legal and economic foundations for foodgrain supply through the establishment of the Public Food Distribution System (PFDS) to ration food during World War II and the Bengal Famine (1943). The drive for domestic foodgrain self-sufficiency and the socialist infused planned approach to the economy guided policy and the economic orientation toward foodgrain management in the post-World War II period and in the early years of independent statehood (Ahmed, 1996).

From these common origins, India and Bangladesh's food systems have evolved in markedly different ways. While both grew significantly during the 1960s and 1970s, Bangladesh's government began to withdraw from foodgrain price and supply management in the 1980s, moving toward a market-based approach. The government today no longer directly participates in the retail rice trade and its PFDS is highly targeted to the poor (Reardon et al., 2012). In contrast, India's PFDS evolved into the nation's most important and costly social safety net and the largest poverty alleviation programme the world has yet seen.

With India currently undergoing a process of food policy reform, this paper compares and contrasts the history and political economy of India and Bangladesh's PFDS. A political economy lens sheds light on political and economic causal mechanisms behind changes in policy over time and is useful for untangling the sometimes conflictive behaviour of public interest and special interest groups (Anderson et al., 2012). This paper seeks to (i) understand the major defining events in the development of each country's PFDS; (ii) identify points of divergence and similarity, and; (iii) derive lessons to improve PFDS effectiveness as India begins implementing its new National Food Security Bill.

The organization of this paper is as follows: Section 2 provides an overview of the food security challenge in India and Bangladesh. Sections 3 and 4 consider the evolution of the PFDS in India and

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[1] The definition of food security used in this paper is a situation "[…] when all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996, article 1, p. 1). Upon this foundation, at the World Summit of Food Security in 1999, the four pillars of food security were designated as availability, access, utilization and stability, with nutrition constituting an integral dimension of the system (Ecker and Breisinger, 2012). The focus of this paper is on access to food.

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Bangladesh, respectively. Section 5 discusses key features of the programs that contributed to reducing food insecurity and Section 6 concludes the paper with opportunities for PFDS reform to enhance food security in the future.

2. The food security challenge in India and Bangladesh and their common origins

India's population in 2012 was 1.237 billion and is growing at 1.3%; approximately 22% of the population is below the poverty line (World Bank, 2014b). Bangladesh's population in 2012 was 154.7 million and is growing at 1.1% (World Bank, 2014a).

Fig. 1 presents trends in food security in India and Bangladesh since 1990. In 1990, there was a greater proportion (34%) of food insecure in Bangladesh accounting for 37 million people compared with 27% and 240 million in India. Both countries made significant progress in reducing the proportion of the food insecure during the 1990s and by 2012, both India and Bangladesh reduced this proportion to 17%.

In 2012, India had 217 million undernourished individuals (FAO, 2013). Although the number of undernourished has fallen by approximately 9.3% over the last 20 years, India has the largest number of people suffering from chronic hunger in the world (FAO et al., 2012), amounting to 30% of the total number of food insecure people living in developing countries (Gulati et al., 2013). Bangladesh has reduced the number of undernourished by 32% over the last 20 years, though in 2012, there were still 25 million undernourished people (FAO et al., 2012).

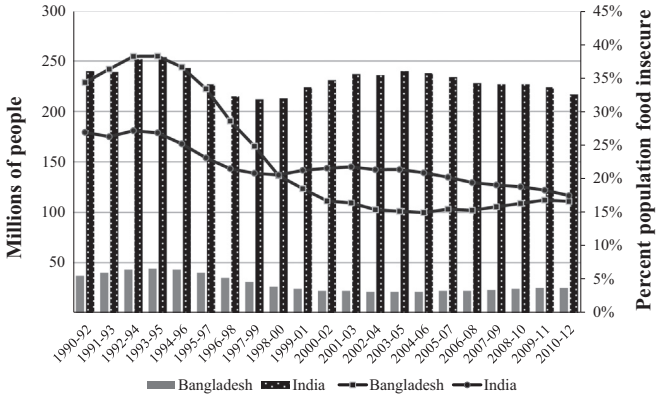

Fig. 1. Number and percentage of food insecure in India and Bangladesh. Data source: FAO, 2013.

India and Bangladesh's modern foodgrain distribution systems were borne of a great famine precipitated by World War II. With the Bengal Province of British India on the frontline of the War and Japanese occupation of Burma, rice imports from British India's most important rice trading partner came to a halt. A cyclone hit West Bengal in October of 1942 laying to waste the *aman* rice crop. The Japanese strike on Calcutta in December of 1942 further disrupted domestic supply. By the end of 1942, rural prices had doubled and by May of 1943, prices had quadrupled resulting in the Great Bengal Famine of 1943 where over 1.5 million people lost their lives (Ahmed et al., 2000; Ministry of Food, 1998).

Emerging from World War II and the Bengal Famine, it was believed that strict government control of foodgrain prices and supply would be required to avert future disasters (Dorosh, 2001). Haggblade and Ahmed (2000) recount these events that remain etched in the minds of policy makers and continue to be at the very core of food policy today: "Two gruesome famines visited Bengal – in 1943 and 1974 – on the heels of two great wars. The first descended amid the terrors of World War II, while the second followed in the wake of Bangladesh's brutal war of liberation. Wrenching images from these famines have haunted the nation for two generations […] Haunted by these ghosts from the past, policy makers have persistently erred on the side of intervention in food markets through direct public distribution of foodgrains and tight market regulation" (Haggblade and Ahmed, 2000, p. 278).

3. The PFDS in India

Following India's independence from Britain rule in 1947, India's PFDS may be analysed in five phases (Table 1). In the first phase (1947–1960), high level Commissions were established to negotiate foodgrain supply management. Some Commissions recommended phased termination of the PFDS, though these initiatives were quickly overturned as natural calamities continued to trigger foodgrain price spikes. The Procurement Commission of

Table 1
Evolution of India's PFDS.

Phase	Year	Detail
Phase I: Foodgrain supply management (1947–1960)	1955	Phased termination of rationing recommended, though was not supported.
		Rationing and import restrictions maintained with the goal of price stabilization and the protection of urban consumers.
		Foodgrains procured under Essential Commodities Act.
Phase II: Response to food crises (1961–1977)	1964/1965	Food Corporation of India and Agricultural Price Commission established to manage food supply shortages, distribute fairly priced grains and guarantee stable remunerative prices to farmers.
	1970s	Reoccurring natural calamities and food shortages prompted universalization of rationing system.
		Ration card system and Fair Price Shops established.
		Blurring of procurement price and minimum support price.
Phase III: Green Revolution (1978–1990)		Introduction of Green Revolution technology results in large gains in domestic production.
		Continued expansion of PFDS despite urban bias, exclusion of the poor, high leakages and high cost to benefit ratio.
		Pressure beginning to mount for system reform.
Phase IV: Reform of PFDS (1991–2012)	1992	Revamped PFDS instituted to improve coverage of rural poor, though little improvement.
		Additional targeted programs established and efforts made to decentralize procurement.
	1997	Targeted PFDS established distinguishing Above Poverty Line and Below Poverty Line households (50 million BPL households initially, paying 50% of economic cost).
	2001	Antyodaya Anna Yojana establishing, targeting 10 million poorest BPL households.
	2002–2011	Refinement of PFDS and further expansion of Antyodaya.
Phase V: New National Food Security Bill (2013 to present)	2013	National Food Security Bill approved to establish legal entitlement to foodgrain and subsidized access to two-thirds of India's population.
		Increased attention to nutritional security

1950 recommended expansionary measures to cover towns with a population greater than 50,000, regulate rural foodgrain supply, establish a government monopoly of foodgrain procurement, and fix levies on foodgrain processors (Nawani, 1994).

Post-Independence, there were periods of lower and more stable prices; however prices began to rise again in 1956. Imports began to be used as a mechanism to ensure price and supply stability. In 1956, arrangements were made with the United States to secure wheat and rice imports which effectively maintained price stability until 1963 (Sing, 2006).

Prior to the late 1950s, the main objective of the PFDS was to ensure price stabilization. From the late 1950s onward, servicing the poor became a complementary objective and the welfare role of the PFDS gained importance. During this time, food aid in the form of low cost wheat imports became accessible and widespread under US Public Law 480. A portion of imports were granted without cost while the remainder was to be paid in local currency, and the funds applied to domestic development priorities (Mooij, 1998).

The second phase (1961–1977) was marked by government responses to domestic production shortfalls. Imports became insufficient to meet demand, and supply and demand gaps widened. During this period, the US used the leverage it gained through the provision of food aid to influence domestic policy. For example, with the 1966 glut in domestic foodgrain production, at the behest of US officials, the Indian government loosened import restrictions on fertilizers and restrictions on access to other domestic markets. The US also pressured India to halt trade with North Vietnam as tensions rose in the region (Mooij, 1998).

The orientation to food policy during this period began to shift toward domestic self-sufficiency as a response to reoccurring instability and growing concern for protecting national sovereignty in light of conditionalities imposed by donor nations (Mooij, 1998). This period of institutional reform saw change in terms of guaranteed remunerative prices to producers and domestic production incentives. Together, these features became the third objective of an increasingly ambitious and complex PFDS.

In 1964, the government established the Food Corporation of India (FCI) and the Agricultural Prices Commission (APC). These two institutions consolidated the position of the PFDS in Indian history. The guiding principles of the FCI and the APC were to manage food supply shortages and distribute fairly priced foodgrains to the poor (Gulati and Dutta, 2010).

The FCI and state agencies procured rice and wheat from farmers at the Minimum Support Price (MSP) which was set to cover costs of production and provide farmers with incentive to invest in improving farm productivity. The government was required, at least in principle, to purchase all quantities of foodgrain offered by farmers. State agencies also procured processed rice from millers under the Essential Commodity Act (1955) at the levy price. The levy price was based on the MSP with an allowance for processing costs and profit. Levy shares varied by state and could be as low as 10% and as high as 75% of miller output (Jha et al., 2007). Beneficiaries of foodgrain rations were supplied with a ration card entitling them to purchase an allocated amount of foodgrain at subsidized prices through Fair Price Shops (FPS).[2] In the second phase of India's PFDS, the number of shops grew from 48 in 1961 to 239 shops in 1977.

The third phase (1978–1990) in the trajectory of India's PFDS was characterized by large increases in domestic foodgrain production with the consolidation of Green Revolution technologies and efforts to expand the PFDS into areas with high levels of poverty. Evaluations of the PFDS at this time, however, continued to show a strong urban bias, exclusion of the poor, leakages and efficiencies (Nawani, 1994; Radhakrishna et al., 1997). An influential World Bank study estimated that for every 1 Indian Rupee (INR) the PFDS transferred to the poor, the Government incurred a cost of 4.27 INR (Radhakrishna et al., 1997). Jha et al. (2011) reported that due to high costs of handling foodgrains, the government spent on average 8.5 INR in transferring 1 INR of benefit to the poor.

Fig. 2 depicts rice and wheat production, procurement and the MSP. The figure shows steady growth in rice and wheat production from the 1950s to 2013. Both rice and wheat procurement began growing faster beginning around 2000. The MSP begins growing very quickly from around 2003, beginning at USD$11.81 and USD $13.52 per tonne for paddy and wheat, respectively, rising to USD $21.87 and USD$25.59 per tonne by 2010, respectively.

The budget implications of increases in the MSP continue to be a critical issue for the Indian government. Fig. 3 tracks growth in foodgrain distribution and its consequences for the foodgrain subsidy. In 1950, foodgrain distribution was 7.6 million tonnes. This amount fell for the decade of the 1950s, only beginning to rise steadily again in the 1960s. By 1965, foodgrain distribution was 10 million tonnes. In 1970, distribution was 8.8 million tonnes and the foodgrain subsidy was around USD$13.3 million. Foodgrain distribution hovered around 11 million tonnes in the 1970s while the subsidy continued to grow to around USD$804.5 million by 1979. The 1980s saw steady growth in foodgrain distribution and the subsidy; by the close of the 1980s, distribution was 16.4 million tonnes and the subsidy was up to USD$1526.0 million.

In the 1990s, India was increasingly pressured to improve targeting of the food insecure, entering the reform phase of its PFDS (1991–2012). A revamped PFDS was instituted in 1992 to improve coverage of the poor in remote areas. Despite these efforts, the revamped system showed little improvement (Swaminathan, 2009). The targeted PFDS was implemented in 1997 and distinguished between Above Poverty Line Households (APL) and Below Poverty Line Households (BPL). APL and BPL households were identified through household surveys (Khera, 2011). Distinguishing between APL and BPL households incorporates self-targeting features since wealthier households have a preference for better quality grains sold on the open market, they tended to opt out of the system. Recent survey results have shown that even in the case of BPL households, as income increases, the proportion of grains purchased through fair price shops decreases (Desai et al., 2010).

The Antyodaya Anna Yojana (AAY) scheme (translating to “grain scheme for the down-trodden”) was introduced in 2001 to provide a larger foodgrain subsidy to the poorest BPL households (Department of Food and Public Distribution, 2013). The AAY scheme has undergone a number of expansions since its institution and by 2011, there were over 24.3 million AAY households each receiving 35 kg of foodgrain. In 1995, foodgrain distribution was at 10.7 million tonnes and the foodgrain subsidy was on the order of USD$1658.2 million.

The fifth phase of India's PFDS was marked in 2013 with Presidential Assent of India's National Food Security Bill (NFSB). The NFSB aims to “[…] provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity […]” (Government of India, 2013a). A main feature of the bill is the establishment of a legal entitlement and rights-based approach to foodgrain which departs from the previous welfare approach (Gulati et al., 2013).

The NFSB continues in the spirit of the previous expansionary phases of the PFDS, representing the largest global experiment of foodgrain subsidization with two-thirds of India's 1.24 billion

[2] At last count there were 478,000 Fair Price Shops in the country, constituting the world's largest retail chain (Desai et al., 2010).

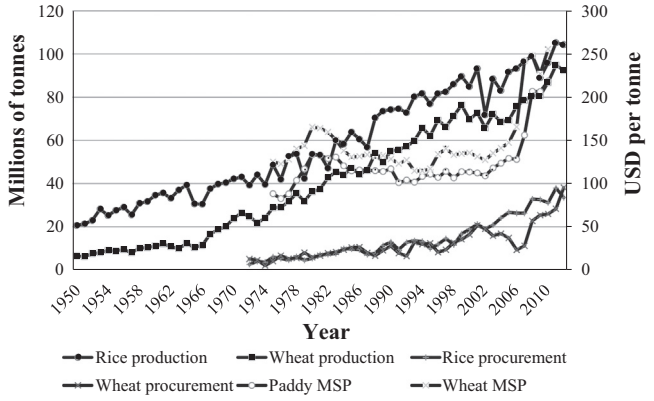

Fig. 2. India: rice and wheat production, procurement and the Minimum Support Price in real prices. Data source: Reserve Bank of India, 2013.

Fig. 3. India: foodgrain distribution and subsidy in real prices.
Data source: Mooij, 1998.

eligible for benefits. Under the NFSB, the food subsidy bill is projected to reach USD$20 billion compared to public investment in agriculture of USD$5 billion (Ganguly and Gulati, 2013). Previous PFDS programs emphasized beneficiaries' access to a minimum caloric intake. An important new direction in the NFSB is its attention to the nutritional security and health of women, children and the undernourished (Government of India, 2013a).

A number of issues are pervasive to India's PFDS and with its expansion under the NFSB, addressing these shortcomings will become more critical. These challenges include exclusion and targeting errors, the impacts of increased procurement on open market prices and sales, distribution system capacity, leakages, and the rapidly increasing subsidy burden (Jha et al., 2011). Identifying APL and BPL households is difficult; a number of national surveys have revealed that up to half of entitled rural households do not have a BPL card (Dreze, 2013). The increased procurement and stocks required under the NFSB may cause market distortions adversely affecting private traders and investment, and put further strain on procurement, storage and distribution capacity (Economic Advisory Council, 2013; Gulati et al., 2013; Joshi and Dassani, 2013). To meet the foodgrain requirement under the NFSB, it was projected that procurement would need to increase by over 27%. Geographical diversification of procurement will be necessary to meet NFSB directives. Although the FCI is mandated to procure grains India-wide, procurement is still highly concentrated in just a few key states (Gulati et al., 2013).

The cost of the PFDS is subject of ongoing concern with India's food security bill growing by 20 times in the last two decades (Kapur and Nangia, 2013; Sharma, 2012). Leakage, a term used to describe the unauthorized diversion of foodgrains, is a large cost component (Ahmed et al., 2004; Ganguly and Gulati, 2013). Reports by Gulati et al. (2013) and Himanshu (2013) estimated leakage at 54% in 1993/94 and 40% in 2009/10. Jha et al. (2011) reported that one third of subsidized grain intended for the poor is sold to non-poor households. Khera (2011) estimated that between 1999/2000 and 2003/04, almost 24% of foodgrains were diverted from the PFDS to open market sales. This amount increased to 54% in 2004/05 and fell back down to 44% by 2007/08. The Planning Commission (2008) reported that 58% of subsidized foodgrain does not reach BPL families due to identification errors, a lack of transparency and unethical practices (Planning Commission, 2008). Leakage is even more pervasive in poorer Indian states (Khera, 2011).

As Mooij (1998) argues, there have been two contradictory tendencies in the trajectory of India's PFDS. On the one hand, economic rationalism has called for the reduction of foodgrain subsidies due to the growing fiscal burden. As political elections approach, however, initiatives to reduce subsidies are countered with populist policies targeting the rural poor which represent India's largest vote bank. Programs with universal coverage tend to have widespread public support (Desai et al., 2010).

The political activism of the farm lobby has been important in directing government food policy and a producer-driven price regime, while politicians with populist tendencies continue to rally for the expansion of services for the poor. With continued programme expansion and increasing procurement prices, the result, in the absence of efficiency-enhancing measures, is an increasingly large and fiscally burdensome programme.

4. The PFDS in Bangladesh

Bangladesh's PFDS may be considered in four phases. In the first phase (1943–1970), the ration system instituted during World War II focused on the major cities of Dhaka, Narayanganj and Chittagong (Table 2). Bengal's Civil Supplies Department began statutory rationing in January 1944. To target the rural poor, Modified Rationing was implemented in 1949 which created a needs-based classification. The PFDS grew steadily in the 1970s and the pool of beneficiaries expanded. Fuelled by imported food aid (mostly wheat), foodgrain distribution increased from 300,000 t in the 1950s to 1.7 million tonnes in the 1970s. During this time, Bangladesh became the second largest recipient of food aid (Atwood, 2000), accounting for 75% of domestic foodgrain supply (Ahmed et al., 2000).

The second phase (1972 to the late 1980s) followed Bangladesh's Independence and the Liberation War in 1971. With the new government's socialist mandate, the ration system continued to include more categories of beneficiaries, as well as cities and regions. Only just emerging from the devastating War, famine struck Bangladesh in 1974 resulting in the loss of 1.5 million lives. The cause of the famine was attributed to government mismanagement of foodgrain stocks, speculative hoarding, external political tensions, and flooding (Atwood, 2000; Hossain and Deb, 2010). The famine further crystallized the role of the state in foodgrain supply and is considered the beginning of food policy planning in Bangladesh (Atwood, 2000).

With increasing food aid in the 1970s and the policy leverage that this afforded donors, donors gradually began to exert pressure for PFDS reform. This pressure motivated the redirection of food aid to poverty-oriented, conditional transfer programs such as the Food for Work and the Vulnerable Group Feeding programs established in 1975. To contribute to stabilizing seasonal and inter-annual foodgrain prices, the Open Market Sales channel was opened in 1978.

Table 2
Evolution of Bangladesh's PFDS.

Phase	Year	Detail
Phase I: Urban rationing (1943–1971)	1942	Statutory rationing in place.
	1949	Modified rationing initiated to target poor more effectively.
	1955	Attempt to terminate the PFDS failed and instead continued to grow steadily.
	1957	Beneficiaries were increased to include government employees, etc.
		Rapid growth in food aid; Bangladesh becomes the second largest recipient (75% of domestic supply).
Phase II: Expansion (1972 to late 1980s)	1972, 1975	Continued expansion into new cities including Khulna and Rajshahi, also expanding scope of beneficiaries.
	1974	Beginning of food policy planning in Bangladesh.
	1970s	Donor leverage and pressure for more effective targeting.
	1975	Redirection of food aid to poverty-oriented conditional transfer programs (food for work and the vulnerable group feeding).
	1978	Open Market Sales channel opened to stabilize seasonal and inter-annual prices.
		Partial failure of the 1978 monsoon rains and pre-monsoon rains of 1979 resulted in drought and food shortages.
		Food crisis brought PFDS reform to the forefront of the political agenda and prompted the implementation of many of the recommendations made in an influential World Bank's 1977 report.
		Food inflation, growth in the subsidy bill and urban bias urged reform to lower ration quotas and subsidies.
Phase III: Reform (late 1980s to 2000)	1980	National Food Policy Strategy formulated aimed and improving targeting and achieving self-sufficiency.
	1980s	Ration price linked to procurement price resulting in convergence of market price with subsidized price.
Phase IV: Targeting (2001 to present)	1992	Large structural adjustment measures occurring. Slower than anticipated growth in demand. All these features enabled the government to abolish rural rationing.
		Trade policy reforms liberalized wheat and rice imports. Increased domestic output and liberal trade reduced government role in price stabilization and foodgrain supply.
		Phase characterized by little government intervention in the market, reduced government stocks; imports account for 10% to 15% of domestic consumption.
	2006, 2008 and 2011, respectively	National Food Policy, National Food Policy Plan of Action and the Country Investment Programme approved.
		Eight monetized and 9 non-monetized PFDS programs.

The third phase of PFDS development (late 1980s to late 1990s) was distinguished by sweeping reforms and growth in domestic output with the introduction of Green Revolution technologies. With food inflation leading to a rising food subsidy bill and severe fiscal constraints, measures were taken to lower ration quotas and price subsidies. Bangladesh's first national food policy and strategy was formulated in 1980. This policy sought to increase food production and distribution, stabilize output and prices, lower subsidies through better targeting, achieve food self-sufficiency, build stocks for market stabilization, provide production incentives, and encourage private sector participation in domestic and international markets (Ministry of Food, 1998).

Rice production grew more rapidly in the late 1980s and 1990s, increasing to 17,710 thousand tonnes by 1989/90 and to 25,085 thousand tonnes by 2000/01 (Fig. 4). Wheat production reached its height in 1998/99 at 1908 thousand tonnes. Imports demonstrated a significantly higher annual variance than production. Imports spiked at 2917 thousand tonnes between 1987/88 and 1988/89 due to damages caused by mass flooding. Imports were the highest in 1998 (5491 thousand tonnes) due to one of the worst flooding events in recorded history; two-thirds of the country was left underwater for weeks.

At its height in 1990, Bangladesh's PFDS was valued at $300 million USD, equivalent to 17% of total government expenditure. With the growing sentiment that resources allocated to rural rationing were not reaching those most in need, the rationing programme was altogether abolished in May of 1992. Termination of rationing freed-up significant resources to be allocated to other distribution programs which performed better in terms of efficiency and cost effectiveness (Chowdhury et al., 2006).

The end of rural rationing was made possible by the coincidence of a number of events which neutralized the greatest potential source of opposition, namely the ration card holders (Atwood, 2000; Chowdhury and Haggblade, 2000). In the early 1980s, government reformers and donors formed an alliance to reduce the growing subsidy burden by linking the ration price to the procurement price. During this period, domestic foodgrain production grew rapidly and investments in infrastructure reduced costs of production and facilitated market development

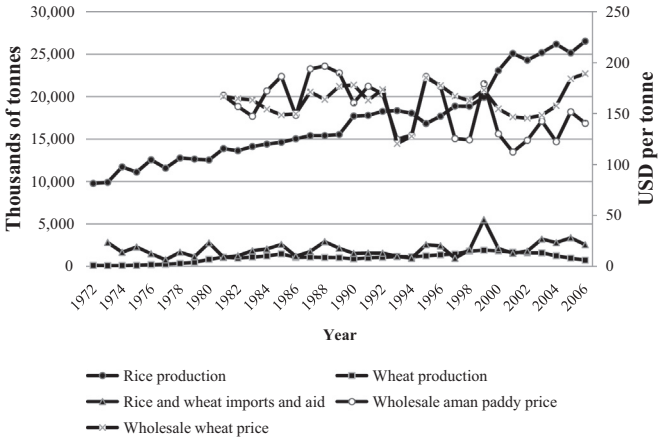

Fig. 4. Bangladesh: rice and wheat production, imports and aid and wheat and paddy real prices. Data source: Ministry of Agriculture, 2007.

and integration. With slower growth in population and thus growth in foodgrain demand, market prices also grew slower thereby eroding the relevance of ration subsidies.

Also in the 1990s, widespread fiscal and trade policy reforms were implemented, including a value added tax, currency liberalization and financial sector reform. Wheat and rice imports were liberalized in 1992 and 1993, respectively (Ahmed et al., 2000; Chowdhury and Haggblade, 2000), and liberalized trade in minor irrigation equipment facilitated the expansion of dry season agriculture (Faridi and Wadood, 2009). Increasingly, liberal trade policies coupled with increased domestic output led to greater domestic foodgrain supply and price stability thereby reducing the government's role in foodgrain markets (Ahmed et al., 2000; Alam et al., 2011; Dorosh, 2001; Thurlow et al., 2011). Public attention to these sweeping reforms and donor involvement in pushing the reform agenda provided government reformers with an opportunistic shield to deflect political heat (Chowdhury and Haggblade, 2000).

Furthermore, many of the reforms bore fruit and had profound impacts on the structure of Bangladesh's economy. These changes

saw the contribution of the agricultural sector to GDP fall and the emergence of an increasingly outward oriented economy with the ratio of exports to GDP increasing from 6.5% in 1973 to 26.6% in 2009. Remittances have also had a strong impact on the nation's economy as it transitioned from an aid dependent economy to one heavily engaged in international markets (Raihan, 2013).

The fourth and current phase (2000 to present) of Bangladesh's PFDS is characterized by low-levels of government intervention in foodgrain markets. The public share of rice supply, while accounting for 30% in the 1960s has fallen to close to 4% in recent years. Foodgrain imports account for between 10% and 15% of domestic supply (Chowdhury et al., 2006). Programs are increasingly targeted to the poor and the use of conditional transfer programs as a delivery mechanism has risen steadily (Ahmed et al., 2000; Chowdhury and Haggblade, 2000).

Today, Bangladesh's PFDS is highly targeted and relies heavily on conditional transfers. Excluding open market sales, non-monetized transfers accounted for over 72% of foodgrain transfers in 2013. Vulnerable Group Development and Food for Works were both worth approximately USD$40 million, with 500,000 and 1 million beneficiaries annually, respectively. In the event of natural disasters, Vulnerable Group Feeding provides relief in the form of foodgrains and other basic necessities and was valued at USD$30 million and benefited on average 240,000 beneficiaries per year. Most other conditional programs transfer cash to beneficiaries through the banking system (World Bank, 2006).

Bangladesh's modern food policy is outlined in the National Food Policy of 2006. The National Food Policy Plan of Action (2008) and the Country Investment Programme (2011) guide implementation of the policy whose goals are to guarantee dependable and nutritious food supply for all people at all times, to enhance the purchasing power of people to improve access and ensure adequate nutrition. The policy approach is largely a market-based one with an emphasis on facilitating productivity gains and increasing purchasing power through employment generation.

5. Discussion

Bates and Block (2009) discuss the paradoxical position of agriculture in the political economy of development. The argument posed is that when agriculture represents a significant share of GDP and farmers are a large component of the labour force, public policy tends to distort prices keeping farmers' income lower than they may be otherwise. As a nation develops, agriculture begins to contribute proportionally less to GDP and farmers represent a smaller proportion of the labour force. When this occurs, public policy tends to favour the income of the farming few.

Engel's Law provides an explanation: as income per capita increases, the share of income spent on food increases at less than proportional rate. In early stages of development, the poor spend a large share of their income on food and as such, they pressure government to pursue policies and programs that keep prices low (Bates and Block, 2009; Swinnen, 2010). As a nation develops, and per capita income rises, there is less pressure to maintain prices lower than the market would determine.

Where India is concerned, the rural poor spend a large portion of their income on food. In 2010, up to 50% of household income was spent on food (Ganguly and Gulati, 2013). To secure the votes of the large rural vote bank, populist politicians have enhanced their appeal with continued expansion of PFDS coverage. Furthermore, the memories of devastating famine and the losses incurred remain engrained in the Indian psyche. Households with limited access to resources consider the institutional entitlement to a minimal level of household consumption a priority above others.

Efforts of the Indian government to increase targeting have not been very successful. The nature of inequality in India has made targeting especially complex. Inequality is not simply that of income inequality, but inequality of class, caste, community and regional divisions. The multi-dimensional nature of inequality makes targeting benefits not only political divisive, but very risky from a political perspective, with potentially destabilizing effects (Desai et al., 2010). With India's economic development, the farm lobby has become increasingly powerful. This interest group has been effective in securing remunerative prices for its produce, not to mention a significant portfolio of input subsidies. With the power of the farm lobby on the one hand and the importance of the rural vote bank on the other, a wedge is driven between the MSP and the subsidized price. This wedge has continued to grow in step with the fiscal burden of India's PFDS.

Although Bangladesh's early PFDS also suffered from targeting and exclusion errors, the situation has improved markedly with self-targeting programme features, conditional programs and overall, an increasingly mixed market and policy-based approach to targeting the poor. Food aid to Bangladesh, in the form of wheat, made up the largest component of PFDS foodgrains. The people of Bangladesh have one of the highest levels of per capita rice consumption in the world (IRRI, 2013). With wheat as the primary foodgrain distributed through the PFDS, the programme was characterized by strong self-targeting. Wheat consumption was also stigmatized: it was only the poorest of the poor who would draw from the PFDS while others with the economic means would purchase rice on the open market. Careful programme design and incorporating self-targeting features such as Bangladesh's Food for Work Programme have been more effective in targeting the poor than the traditional methods of identifying beneficiaries through poverty surveys.

Rapid reform of Bangladesh's PFDS was possible due to a window of political opportunity that enabled the ration subsidy to be abolished. An alliance between government reformers and donors was formed; large gains were made in domestic foodgrain production; both population and foodgrain demand growth slowed; foodgrain market prices declined and converged with ration prices thereby nullifying benefits of PFDS-sourced foodgrains, and; other major structural reforms diverted public attention from ration subsidy policy. This convergence facilitated difficult policy measures to be taken, policy measures which would eventually prove to be welfare enhancing. Together, these factors neutralized any potential opposition to the termination of ration subsidies and paved the way for the development of the current PFDS. The result of these reforms was a largely liberalized domestic market and significant efficiency gains in grain markets (Reardon et al., 2012). This situation contrasts strongly with the case of India where the powerful farm lobby maintained procurement prices high, while populist politicians determined to capture the votes of the rural poor continued to expand PFDS coverage and maintain subsidies high.

Amartya Sen (1995, p. 14) argues that “benefits meant exclusively for the poor often end up being poor benefits” (Sen, 1995). The Indian experience has corroborated this statement: explicitly targeted programs did not create more benefits for the poor. Empirical research has shown that households with higher incomes prefer to purchase better quality grains from the open market and forgo the subsidy provided by the Indian PFDS (Desai et al., 2010).

India's approach to developing its PFDS focused on increasing access without much structural change. As its PFDS expanded, however, exclusion errors persisted as did programme leakages. India's new food security bill aims to reduce exclusion through further expansion, increasing coverage to up to 75% and 50% of the rural and urban population, respectively. By increasing the number

of beneficiaries, exclusion errors will be reduced, though the budget implications are substantive.

There are many advocates in India to gradually move towards conditional schemes such as conditional cash transfers, including the Ministry of Finance (Ganguly and Gulati, 2013; Kapur et al., 2008). Conditional cash transfers deliver dividends in two ways. First, they enable households to purchase foodgrains to satisfy immediate needs during lean times. In less lean times, farming households may invest in increasing agricultural production as well as in health and education. Investment can provide longer term gains and greater opportunity for the next generation to break out of the poverty cycle. Second, positive externalities arise from investment that enhances the future productivity potential and human capital formation which benefits society as a whole (Himanshu, 2013). Conditional cash transfers could be readily implemented and trialled, first in surplus states and population centres where adequate banking infrastructure exists (Government of India, 2013b). There is significant experience to be drawn from countries such as Brazil, Mexico and the Philippines where conditional transfer programs have been in place for a number of years.

Bangladesh's success in reducing food insecurity has largely been one of increasing domestic production and increasing efficiency of foodgrain supply management. Market liberalization has contributed to growing foodgrain output, larger and more integrated markets and overall gains in efficiency and competitiveness (Chowdhury et al., 2006). With the liberalization of trade, the private sector now engages with import markets to stabilize prices and make up for domestic production shortfalls when they occur (Ahmed et al., 2000; Alam et al., 2011; Dorosh, 2001; Thurlow et al., 2011). Since the 1980s, the wholesale real paddy price has remained relatively stable for the two and a half decades that followed, providing an indication of the success of price stabilization mechanisms (Fig. 4). Between 2003 and 2007, rice imports have contributed between USD$1.0 and USD$1.6 billion in consumer surplus (Dorosh and Rashid, 2012).

India's new food security bill will increase the requirements for foodgrain procurement, storage and distribution. Public–private sector partnerships can help induce investment, modernize the foodgrain system, increase capacity and improve competitiveness. With decentralized procurement and procurement targeted in surplus states in close proximity to deficit states, efficiency may be improved and costs reduced (Sharma, 2012). Furthermore, decentralization may increase the scope for private traders to engage and invest in the foodgrain system (Jha et al., 2007).

New technologies for foodgrain supply management can generate large gains. Computerized public distribution systems have been implemented successfully in the Indian state of Chhattisgarh and are being trialled in the state of Bihar (Mahapatra, 2011). This system, also referred to as ePDS, is composed of an integrated weight management system, a Management Information System, inventory management, a GPS-tracked fleet for foodgrain transportation, and a mobile message-based information and grievance system. Through the messaging system, beneficiaries are informed of the availability of grains, and the local (Panchayat) vigilance committee is advised of foodgrain distribution to local dealers. Individuals are empowered with knowledge of their entitlements, while the Panchayat has a vested interest in providing effective oversight.

6. The way forward

India and Bangladesh's foodgrain systems began to develop in different directions in the 1980s with market forces in Bangladesh contributing to a more efficient delivery of food security outcomes. Market liberalization in Bangladesh effectively connected and integrated markets, enabled private traders to engage directly with import markets to stabilize prices, and improved foodgrain supply management through increasing responsiveness to price signals.

The political window of opportunity for reform that presented itself in the case of Bangladesh is unlikely to occur in India. Improvements will occur gradually through piloting of innovative programs and through deliberative stakeholder processes. Nonetheless, successful elements of Bangladesh's experience may be trialled in India. Designing programs with built-in self-targeting will be more effective in reaching the poor. Early evidence in India already shows programs with self-targeting features are more successful, such as the mid-day meal programme. Explicitly targeted programs continue to underperform in service of the poor (Desai et al., 2010).

Conditional transfers continue to perform efficiently as a delivery mechanism for reducing food insecurity while global experience and lessons learned with conditional transfers is mounting. The double dividend that conditional cash transfers generate and their short and long-term benefits create enabling conditions for households to break out of chronic cycles of poverty. Technological innovations such as the ePDS also show great promise for improving supply chain efficiency and reducing losses and leakages.

Improving food security for India's 217 million undernourished people is a formidable challenge. Expansion of the PFDS has historically exhibited decreasing returns to scale. Bangladesh's diversified and highly targeted approach to enhancing food security has efficiently and effectively reduced the number of undernourished people. With a country as large and diverse as India, there will be no silver bullet for eradicating hunger. If substantive gains are to be made, a mix of market and policy-based approaches will be required to deliver on the National Food Security Act's promise of "[…] access to adequate quantity of quality food at affordable prices to people to live a life with dignity […]" (Government of India, 2013a, p. 1).

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