THE 'EVERYDAY' POLITICAL ECONOMY OF SOCIAL ENTERPRISE

LESSONS FROM *GRAMEEN SHAKTI* IN BANGLADESH

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MA (International Studies) BSc (Hons)

Thesis submitted for the degree of

Doctor of Philosophy

in the

Discipline of Politics

The University of Adelaide

SOUTH AUSTRALIA

July 2012

For Shaun

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Acronyms and Abbreviations

ADAB	Association of Development Agencies in Bangladesh
ADB	Asia Development Bank
B/W TV	Black and White Television
BCSIR	Bangladesh Council of Scientific and Industrial Research
BRAC	Bangladesh Rural Advancement Committee
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CFL	Compact Fluorescent Lamp/Light
CNG	Compressed Natural Gas
CSR	Corporate Social Responsibility
DC	Direct Current
EIPE	'Everyday' International Political Economy
FDI	Foreign Direct Investment
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
GoB / Government	Government of Bangladesh
GTC	Grameen Technology Center/s
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
HH	Household
ICS	Improved Cook Stove/s
IDCOL	Infrastructure Development Company Limited
IFRD	Institute of Fuel Research and Development
IMF	International Monetary Fund
INGO	International Non-Government Organisation
IOC	International Oil Company
IPE	International Political Economy
IPP	Independent Power Plant
IT	Information Technology
KfW	Kreditanstalt für Wiederaufbau (Reconstruction Credit Institute)
lakh	100,000
LED	Light-Emitting Diode
LGED	Local Government and Engineering Department
MNC	Multinational Company
MoU	Memorandum of Understanding

MW	Megawatt
n.d.	no date
NA	Not Available / Not Applicable
NDBMP	National Domestic Biogas and Manure Programme
NGO	Non-Government Organisation
NGOAB	NGO Affairs Bureau
PBS	Palli Bidyut Samities (Electricity Cooperatives)
PO	Partner Organisation
PV	Photo-Voltaic (solar energy)
REB	Rural Electrification Board
REEEP	Renewable Energy and Energy Efficiency Programme
REREDP	Rural Electrification and Renewable Energy Development Project
RIPE	'Regulatory' International Political Economy
RSF	Rural Services Foundation
SAP	Structural Adjustment Program
SHS	Solar Home System/s
SNV	SNV Netherlands Development Organisation
Tk	Taka. Bangladesh currency unit. 70 Taka ~ US$1 (1 January 2010)
UK	United Kingdom
US / USA	United States of America
USSR	Union of Soviet Socialist Republics
WHO	World Health Organisation

Abstract

With increasing international concern for both the corporate social responsibility of businesses and the market-compatibility of charitable projects, a new field is sparking interest in government, business and academic circles. The burgeoning field of 'social enterprise' incorporates a variety of organisations which attempt to tap into the potential of business and nonprofit ventures, with their dual social and financial goals, or 'double bottom-line'. The literature concerning social enterprise is still in the early stages of development, with much focus on the economic debates but considerably less attention to the political aspects that influence and drive the field. This is especially true for social enterprises in developing countries. In order to help fill this gap in the literature, the thesis uses an 'everyday IPE' (International Political Economy) lens to explore and assess 'Grameen Shakti', an energy-focused social enterprise from Bangladesh.

In-depth analysis of this case study reveals the ways that Grameen Shakti has been able to 'resist' the energy development history of Bangladesh, with its alternative focus on decentralised, renewable energy solutions for rural households. In terms of its sales-based dissemination of energy technologies like the solar home system, Grameen Shakti has made considerable strides forward. The social enterprise's dual focus on both financial and social goals, however, has meant that it has not been as successful with its less financially-rewarding technologies and sales initiatives. Furthermore, the analysis shows that Grameen Shakti's product-oriented approach is not sufficient for addressing embedded local socio-political energy issues, such as the gendered energy inequalities surrounding land use and fuelwood supply. In summary, while Grameen Shakti does step outside the conventional boundaries of energy development in Bangladesh, and has made significant progress in addressing rural energy needs, its focus on market-compatible energy solutions means that it is an incomplete solution to rural energy development.

In itself, this finding is not problematic, as a social enterprise like Grameen Shakti could still be considered a valuable piece in the development puzzle. It is when we consider the national and international political contexts, however, that the broader causes and consequences of Grameen Shakti's choices become apparent. With an analysis of the political economy of development in Bangladesh, the thesis reveals how social enterprises like Grameen Shakti have been used by powerful national and international actors, such as the Government of Bangladesh and the World Bank, to direct the development sector as a whole towards more market-compatible, and less politically sensitive, development issues. Consequently, it may be argued that social enterprises in Bangladesh and other developing countries are helping to legitimise the marginalisation of the types of development solutions and organisations that may be better able to challenge structural political inequalities and mobilise for social change.

In this way, the social enterprise field is part of a broader, global contestation between neoliberal and counter-hegemonic agendas, with individual social enterprises (in both developing and western countries) contributing to this scenario with varying degrees of resistance, complicity and awareness. Currently though, with the social enterprise literature being dominated by the economics of social entrepreneurship, political issues such as this are not being sufficiently studied or debated. The thesis ends, then, with a call for more 'everyday IPE' analyses of social enterprises in a variety of contexts: to gain a more nuanced understanding of these significant political dimensions and to create a social enterprise discourse that better reflects the diversity in the field.

Declaration

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Hackett, M. (2011). Can Social Enterprise Deliver Gender 'Appropriate Technology' in Rural Bangladesh? *Outskirts: Feminism on the Edge*, *25*(November). Retrieved 1 July 2012, from http://www.outskirts.arts.uwa.edu.au/volumes/volume-25/michelle-t-hackett.

Hackett, M. (2010). Challenging Social Enterprise Debates in Bangladesh. *Social Enterprise Journal*, 6(3), 210-224.

Hackett, M. (2009). Social Enterprise in a Global Financial Crisis: Is there a Developing-World Voice? *Proceedings of the APSA Conference 2009*, Macquarie University, Sydney, 28-30 September 2009.

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Signed: Michelle T. Hackett Date

Acknowledgements

The author would like to acknowledge and thank Associate Professor Peter Mayer, of the University of Adelaide, for his consistent and insightful observations and feedback. His constructive comments, and our detailed discussions, were an essential ingredient in creating this thesis. Similarly, insights from Dr Juanita Elias, as co-supervisor, were valuable and appreciated. I would also like to acknowledge the supportive environment which I have been fortunate enough to have had during the final write-up stages of my PhD, with the staff and students at the Asia Research Centre, Murdoch University.

During my field research in Bangladesh, several employees of Grameen Shakti and Grameen Bank went 'above and beyond' in helping to accommodate my research requirements. Sincere thanks go to Mr Md. Fazley Rabbi of Grameen Shakti, and Mr Md. Humayun Kabir of Grameen Bank, in particular, along with my Bangla interpreters and my fellow students. My thanks also go to all interviewees, from head office to branch level, who set aside time for me. I would also like to acknowledge the PhD and travel scholarships from the University of Adelaide and the School of Humanities and Social Sciences, which enabled this research to take place.

And finally, deepest thanks go to my family and friends in Perth, Brisbane and Adelaide, for their continued encouragement and support. Special thanks go to my husband Shaun Frost, who not only helped me get through late nights and long weekends, but who read and gave constructive feedback on every chapter. Without his understanding and patience, the PhD would not have been such a positive and enlightening experience.

Chapter 1 – Introduction

1.1 Introducing the research topic

1.1.1 The burgeoning field of 'social enterprise'

The challenges presented by climate change and recent global financial crises have caused many in the international community to question the dominant economic paradigms (Harding 2009, April 24). Some argue that modern capitalism has placed profit-making on an ideological pedestal, and it is now time for social and environmental considerations to find their place at the heart (or bottom-line) of the capitalist system (Emerson 2005; Shutkin 2007). Interest in a new movement has been pioneered by social entrepreneurs such as Muhammad Yunus (2007a), Jed Emerson (2005) and Bill Drayton (2002), who advocate for an "improved", "sustainable" and "socially conscious" capitalism; one in which a new form of organisation, the social enterprise, can deliver social good with business acumen.

Broadly defined, a social enterprise organisation attempts to combine both social and business objectives and/or practices, often with an intention to "blend social, environmental and economic value" (Emerson and Bonini 2003, p.1). One of the earliest examples of an enterprise with blended social and financial goals is the cooperative, with the cooperative movement initiated by Robert Owen in the mid-1800s (Alter 2007, p.2). Over the past few decades, a greater variety of social enterprise forms have been recognised, as "social enterprises are increasingly understood as hybrid organisations, drawing together economic and social resources, and transcending boundaries between sectors" (Barraket 2009, p.6). Consequently, the study of social enterprise has moved beyond its cooperative roots to become a multifaceted field in its own right; resulting in, according to Jed Emerson among others, "an exciting wave of new practices across the for-profit and nonprofit sectors" (Emerson and Bonini 2003, p.1). Through the development of enterprises which combine a double (or triple) bottom-line, proponents of the social enterprise

movement claim to provide innovative solutions to a variety of entrenched social, environmental and market-based problems. Some have even gone so far as to claim that social enterprise, as the embodiment of a new form of economic enterprise, is capable of transforming the capitalist system (Yunus 2007a).

With such expectations and proclaimed potential, a comprehensive understanding of the nuances of the social enterprise field is essential. However, an examination of the social enterprise literature reveals a gap in the extent to which social enterprise has been studied by political economists and development theorists. Enthusiasm for this new form of enterprise has found a ready home in the business schools of many academic institutes, such as the 'Harvard Business School' and Duke University's 'Fuqua School of Business'. It is the 'business school' perspective which has framed the discourse and drawn up the boundaries of the debates concerning the field of social enterprise. The consequences of this are that essential political dimensions have not been sufficiently critically explored. This has been particularly and acutely true for social enterprises initiated, controlled and run by people in developing countries. The objective of this thesis, then, is to contribute to this growing field by exploring the potentials and problems of social enterprise in a 'developing world' environment, using a political rather than an economic theoretical lens. In order to do so, the thesis will draw from the growing 'everyday IPE' (International Political Economy) literature to explore the case study of a Bangladeshi social enterprise, called 'Grameen Shakti'.

1.1.2 Grameen Shakti as a social enterprise case study

Bangladesh is eminently suitable for such a study, as it has a strong history of locally-formed, enterprising, development NGOs (non-government organisations), which emerged after Independence in 1971. As noted by Gauri and Galef (2005, p.2046) among others (Fruttero 2005, p.763; Makita 2009, p.53), Bangladesh has "one of the largest and most sophisticated NGO sectors in the developing world". The Grameen 'family', in particular, includes some of the largest and oldest development organisations in Bangladesh, and some of the only to actively self-identify as social enterprises. While 'Grameen Bank' has received considerable analysis, in terms of its

microfinance activities, other Grameen social enterprises have been relatively neglected. The social enterprise Grameen Shakti, literally 'Village Energy', has been chosen as the case study for this thesis, as it combines the interesting, topical fields of renewable energy development and social enterprise, both of which challenge the status quo of 'conventional' development (as explored further in chapters two and three).

Grameen Shakti was established in 1996 by the Grameen founder, Professor Muhammad Yunus, and has since become a leading player in the provision of household energy in rural Bangladesh (see www.gshakti.org). Its mission, as a social enterprise, is to solve the energy market failures currently plaguing rural areas, through application of business practices with social intent. Grameen Shakti's primary strategy is to address these energy needs through the dissemination of renewable energy technologies, notably solar home systems, biogas plants and improved cook stoves. It has adopted business practices to do so, selling its solar-electric and cooking products to rural customers across Bangladesh. While legally registered as a non-profit organisation, it is still attempting (via its sales) to remain financially self-sufficient, and thus identifies itself as a social enterprise (Barua 2009, January 13).

Grameen Shakti, consequently, considers itself to be distinctly different from either a traditional business or a traditional charity. Rather, as a social enterprise, it is attempting to balance multiple bottom-lines with its joint social, environmental and financial objectives. For Muhammad Yunus (2010), Grameen Shakti demonstrates the ability of his social enterprise model to solve entrenched socio-economic problems in developing countries like Bangladesh. The ultimate aim for Yunus, however, is to prove that his alternative economic paradigm is not only possible, but is a preferable alternative to the standard capitalist form of business. He argues that by simply embracing his "social business" model, we can develop a more socially-conscious global economic system, one which is capable of solving the development issues that capitalism cannot (Yunus 2008).

1.1.3 Studying social enterprise in a 'developing country' context

Within the IPE literature, 'development' is a concept which is construed and enacted at various levels: from grassroots interventions, to national poverty-alleviation strategies and global development discourses. For the energy-focused social enterprise Grameen Shakti, the national Bangladeshi history of 'energy development' and myriad local contexts have influenced its activities and ideology (as will be explored in detail in chapter three). Significantly though, the international development environment has also played an important role in shaping Grameen Shakti's choices and trajectory. In order to gain an appreciation of the forces that have influenced not only Grameen Shakti but also social enterprises from developing countries[1] beyond Bangladesh, we need to explore the IPE of the field in global terms. This is especially important for a study of social enterprises, like those of Muhammad Yunus (2007a, p.5), that claim to be building an alternative development future.

Before further articulating the research agenda and objectives of this thesis, then, it is helpful to present some background into the recent history of 'development', in an international context, and how this has influenced the rise of social enterprise. This background will provide a rationale for the theoretical methodology to be employed in the thesis, which will be developed in section 1.3. It will also help to frame and direct the primary research question, which will be presented in section 1.4.

[1] This thesis will use the terms 'developing' countries, 'western' countries (primarily the US, UK, western Europe, Australia *etc*) and eastern European 'transitional' countries within the following analysis. This mix of nomenclature has been chosen to reflect the divergences which have occurred in the social enterprise literature, as will be discussed in chapter two. Using terms of development which have contentious political histories and which create artificial categories, runs the risk of reinforcing rather than challenging dominant ideologies in the development discourse (see Haynes 2008, pp.3-4). However, categorisations, in general, can be useful, so long as we acknowledge their limitations and political undertones. In the following chapters, the apostrophes over these 'loaded' terms, such as 'development' and 'developing' countries, will be implied when not written.

1.2 Background and rationale

1.2.1 Disillusionment with the neoliberal development ideology

Since the 1980s, neoliberal economic structures and ideologies have arguably dominated the world political economy.[2] While the early post-war years of the 1950s, 60s and 70s were influenced by Keynesian economics and state-led development, the Thatcher and Reagan era altered the perceived role of the state (Haynes 2008, p.30). These events commenced national policy shifts from 'government to governance',[3] and heralded the rise of a neoliberal approach to international development. This was accompanied by an ideological turn, in some branches of development studies and global economic theory, concerning the superiority of the free market (Berger and Beeson 1998, p.492). Consequently, there emerged a new dominant agenda in the prevailing development paradigm: the Washington Consensus, championed by the US and the Bretton Woods Institutions, particularly the World Bank and the International Monetary Fund (IMF) (Williamson 2004).

The emergence of the Washington Consensus was signalled with the introduction of Structural Adjustment Programs (SAPs) by the IMF and World Bank in the 1980s. With the aim of increasing market influence and reducing government interventions, the IMF and World Bank required developing countries to privatise state businesses, cut state spending on welfare and services, promote foreign investment, increase trade liberalisation, *etc* (Williamson 2004, p.3). The outcomes were widely criticised, resulting in increased poverty (Ishengoma and Kappel 2006, p.11; Haynes 2008, p.31) as the anticipated "trickle down" of benefits to the poorest did not eventuate (Barnett 1993, p.102). "The backlash against neoliberalism … in the global South in the 1990s is

[2] Neoliberalism is most often characterised by its focus on privatisation and liberalisation in order to minimise government and create a 'free market' capitalist economy which is unregulated and unimpeded by the government (see Haynes 2008, p.38). The ways in which neoliberalism (and neoliberal development), as a concept, is used to describe and interpret history, however, is inherently political, influenced by the world view employed by the author using it. The following, then, is not intended to be an incontestable or complete account of neoliberalism in 'development', but focuses on the events and components which have most bearing on the analysis to follow.

[3] The contracting-out of government services and the minimising of government bureaucracy, in-line with neoliberal policy, is often characterised by the term 'government to governance'. In the UK, this transition was dubbed the New Public Management. See Rhodes (1996).

widely noted. It emerged in part from the disappointing record of the neoliberal doctrine even in narrow economic terms" (Sandbrook 2011, p.7).

Amid growing unrest and political pressure, the Bretton Wood Institutions, from the mid-to-late-1990s, began to soften their stance on state involvement in development, and re-adjust their development priorities with a return to a focus on poverty alleviation.[4] In a watershed report titled *The State in a Changing World*, for example, it was conceded, with reference to the East Asian "miracle", that "government and the private sector can cooperate to achieve rapid growth and shared development" (World Bank 1997, cited in Berger and Beeson 1998, p.500). Significantly, national development became synonymous with the need for developing country governments to demonstrate 'good governance', in order to properly facilitate macro-economic growth.

At the same time, the World Bank also began to expand beyond the conventional liberal economic discourse, to more systematically incorporate issues and strategies such as female empowerment and environmental sustainability into its conception of development. It has been argued by some, however, that this new approach, set within a broader Post-Washington Consensus (PWC), still retains a strongly neoliberal ideological stance on development and the world economy. Kothari and Minogue (2002) and Cammack (2002), among others (see Bryne, Toly and Glover 2006), have argued that while powerful actors such as the World Bank appear to have altered or tempered their approaches in response to growing international concerns, they have not deviated from an essentially market-focused, neoliberal trajectory. Concepts such as empowerment and sustainability, for example, are still being framed primarily in narrow economic terms (as will be explored in more detail in a discussion of energy development in chapter three).

More broadly, as global inequalities continue to rise (UN 2006) and neoliberalism extends beyond the PWC, there is growing disillusionment with the neoliberal

[4] The SAPs, for example, were eventually abandoned in favour of Poverty Reduction Strategy Papers (Weber 2004a, p.197).

prescription for development, causing many to wonder what alternatives do or might exist (see Polanyi Levitt 2005, p.153). As emphasised by Sandbrook (2011, p.1): "The inadequacies of neoliberalism have spawned a widespread questioning of this dominant worldview. Intellectuals and political movements search for an alternative development ideology that explains what has gone wrong, provides a vision of a more desirable future and suggests a process for achieving this goal".

1.2.2 A search for alternatives to 'neoliberal global capitalism'

In reaction to growing global disparities and recent global financial and environment crises (Harding 2009, April 24), western capitalist institutions are "experiencing a loss of public confidence and the 'unmaking of the market' is back on the political agenda" (Edwards 2008a). Consequently, previously "out-dated" economic theorists, such as John Maynard Keynes and his more government-regulated form of capitalism, are "making a return from intellectual banishment by mainstream economics" (Polanyi Levitt 2005, p.153). Concurrently, in the field of political economy, various researchers have been attempting to explain this disillusionment with "neoliberal global capitalism"[5] using the concepts and critiques of theorists such as Antonio Gramsci (1971) and Karl Polanyi (1944, 1977). For Stephen Gill (1995, pp.400-401), for example, global dissatisfaction with the status quo is evidence of a broader (neoGramscian) "organic crisis" of "neoliberal globalisation" and capitalist hegemony.[6] Similarly, others have questioned whether this discontent is a precursor to a Polanyian "countermovement" against the neoliberal development trajectory in struggling economies (see Sandbrook 2011, pp.7-10).

[5] Gibson-Graham (2006, p.72).

[6] The Gramscian concept of hegemony is a "dynamic lived process in which social identities, relations, organizations, and structures based on asymmetrical distributions of power and influence are constituted by the dominant classes" (Mittleman and Chin 2005, p.18; and see Robert Cox (1983) for an analysis of how this conception of hegemony can be applied to the current neoliberal world order). Stephen Gill (1995, p.399) argues that the rise of neoliberal policies in development is part of the continuation of the "globalisation of liberalism". This latest incarnation of liberal capitalism, he argues, however, has not maintained sufficient international legitimacy to be considered hegemonic (*i.e.* it is in a state of 'organic crisis', as noted above). Consequently, Gill (1995, p.400) describes the current world order as in a state of neoliberal "supremacy" rather than hegemony.

While there is increasing enthusiasm concerning the possibility of challenging the neoliberal status quo, there is also, however, scepticism concerning the ability of development practitioners to imagine, create or sustain alternatives. Some political economists have argued, for example, that due to the hegemony of neoliberalism, "[d]evelopment alternatives have not remained alternative for long- many of them have been successfully and often quite rapidly absorbed into the mainstream" (Kothari and Minogue 2002, p.9). More fundamentally, it has been suggested that the hegemony of the capitalist discourse, in both practitioner and academic circles, propagates the 'economistic fallacy'[7] that the capitalist economy is the only legitimate form of economy ever present or possible. The consequence of this, according to J. K. Gibson-Graham (1996, 2006),[8] is the dominance of a "capitalocentric" world view that discourages and disguises alternatives to capitalist economic systems, including specifically, the free market system that currently informs neoliberal development ideology.

In order to "dislodge the discursive dominance of capitalist economic activity and reclaim it as a contested space of representation", Gibson-Graham (2006, p.54) have promoted efforts to explore existing and future alternatives to capitalism in developed and developing countries. Such efforts, as they put it, involve "actively retheorizing capitalism and reclaiming the economy here and now in myriad projects of alternative economic activism" (Gibson-Graham 2006, p.xxi). This approach, then, attempts to unpack the core components of capitalism at a grassroots level. In practice, exploration of alternative economies, or alternative economic enterprises, encompasses an analysis of a variety of non-capitalist activities, including the home-based 'caring' duties in the family economy, reciprocal exchanges in traditional economies, and new community enterprises within the formal market environment; demonstrating that "the diverse economy is made up of many kinds of enterprise in which ownership and production are differently configured" (Gibson-Graham 2006,

[7] Using 'economistic fallacy' in the Polanyian sense of the term. See Polanyi (1977, ch 1).

[8] J. K. Gibson-Graham is the chosen publication name (pen name) of authors Jenny Graham and Katherine Gibson.

p.65).[9] By reimagining the types of economic activities that can exist, beyond the capitalist framework, we also help to create a new or alternative development discourse which diverges from the standard neoliberal prescription. Interestingly, some of the "alternative enterprises" that Gibson-Graham (2006, p.65) refer to in their analysis include "green firms" and "socially responsible firms", both of which can be classified as types of social enterprise.

1.2.3 Social enterprise as an alternative to 'one-dimensional capitalism'?

While Gibson-Graham are interested in challenging the ideological dominance of capitalism by exploring a variety of alternative economic possibilities, others have called for more narrowly-defined, specific measures to engender change. Social entrepreneurs, for example, advocate for the promotion of an unconventional form of organisation, or enterprise, which better accommodates both the social and economic potentials of the economy. The underlying rationale, for many social entrepreneurs, is that the capitalist system requires a 'social' adjustment. This position is certainly not new, with figures such as Polanyi championing the view that capitalism is incompatible with social cohesion, and needs to change.

In the historical work of Karl Polanyi (1944, 1977) we see an emphasis on the essential role of social relations in building economic systems that do not entail the levels of social dislocation and inequality found within the capitalist economic system. The capitalist market of "supply-demand-price", he argued, is only one part of the broader "human economy" (Polanyi 1977, pp.5-6): "[M]an's economy, as a rule, is submerged in his social relationships. He does not act so as to safeguard his individual interest in the possession of material goods; he acts so as to safeguard his social standing, his social claims, his social assets" (Polanyi 1944, p.46). The capitalist market,

[9] So as to allow for a 'greater imagining' of alternative economies, Gibson-Graham use a minimalist definition of capitalism (Gibson-Graham and Cameron 2007, p.21). This thesis adopts a similar minimalist definition of capitalist, in order to recognise a greater range of social enterprise alternatives. Specifically, the thesis will restrict the definition of capitalist enterprises to those which redistribute surplus (in labour or commodity) to private individual owners or shareholders for personal gain.

alternatively, according to Polanyi, creates an artificial separation between the economy and society, such that the market is 'disembedded' from social life. "Polanyi demonstrated that in capitalism, instead of the historically normal pattern of subordinating the economy to society, a system of self-regulating markets requires subordinating society to the logic of the market" (LeBaron 2010, p.892). The consequences of disembedding the market from its social roots is disruption to social obligations and roles, community reciprocity norms *etc*, eventually leading to unrest and a mass "countermovement" against the capitalist system (Sandbrook 2011, p.6).

According to Polanyi (1944, p.249), it is the promotion of self-interest, inherent in the capitalist model, which is the fundamental problem. The liberal conception of 'the market', integral to the capitalist system, is based on the hypothetical rational, self-interested individual (Smith 1939, pp. 26-27). This is an assumption that Polanyi (1944, p.249) rejects: "The true criticism of market society is not that it was based on economics - in a sense, every and any society must be based on it - but that its economy was based on self-interest". In essence, Polanyi argues that "[s]elf-regulating markets are dangerous because they unleash amoral, opportunistic drives upon human beings and nature, both of which come to be treated as mere means to the end of personal gain" (Sandbrook 2011, p.23). While Polanyi's assessment of the problems with capitalism is not without its critics (*e.g.* Polanyi's dichotomising of a disembedded-embedded economy is considered problematic (see Knowles and Owen 2008, pp.182,186)), his insights have been invaluable for many in attempting to challenge the dominance of capitalism, and indeed, the neoliberal approach to development (for an example of this see Sandbrook 2011).

Polanyi's solution to the social dislocation caused by capitalism was to reject the capitalist system in its entirety, and attempt to re-embed the economy in society through, for example, a socialist transformation or revolution. History has shown some of the potential dangers of this path, with the centrally-controlled and economically disastrous Communist policies of the USSR. Sandbrook (2011, p.18) argues that Polanyi's rejection of the 'social democracy' solution has proven too hasty, and that this structure can provide a more viable alternative to capitalism and the current

neoliberal 'free market' trajectory. In a similar vein, others have called for the return to a Keynesian "embedded liberalism" economic system (see Polanyi Levitt 2005). While Keynes found capitalism to be the most economically efficient system, he argued that it needed to be tempered, at a state level, with measures to account for the inequalities the system can produce. Similarly to Polanyi, "[w]hat he [Keynes] found profoundly objectionable was 'the fostering, encouragement and protection of the money making motives of individuals'" (Keynes 1971, cited in Polanyi Levitt 2005, p.154). This theme of problematising the promotion of individual self-interest, a key liberal tenet, is also present in some (though certainly not all) of the social enterprise literature. One of the most vocal in theorising the role and place of social enterprise in the economy is the founder of the Grameen family of social enterprises in Bangladesh, introduced earlier, Muhammad Yunus.

Muhammad Yunus (2007a, p.11) argues against the presumption "that entrepreneurs are one-dimensional human beings, who are dedicated to one mission in their business lives – to maximize profit". Yunus rejects the fundamental liberal assumption of individual self-interest as the primary motivator in market interactions. "The urge to do good exists in all of us – right along with self-interest" (Yunus 2008). Similarly to Polanyi, he argues that the traditional conception of liberal capitalism, built upon self-interest and profit-maximisation "insulates the entrepreneurs from all political, emotional, social, spiritual, environmental dimensions of their lives… [such that it has] stripped away the very essence of human life" (Yunus 2007a, p.11).

Yunus advocates, instead, for a more complex understanding of human motivation, one which acknowledges both financial and social-based drives and goals. "By defining 'entrepreneur' in a broader way we can change the character of capitalism radically, and solve many of the unresolved social and economic problems" (Yunus 2007a, p.11). That is, for Yunus, we need to reconceptualise capitalism to allow for a broader range of human motivation. "Many of the problems in the world remain unresolved because we continue to interpret capitalism too narrowly" (Yunus 2006). Yunus' solution to this narrow interpretation of capitalism is to expand the structure to allow for entrepreneurs and enterprises which seek to maximise 'social returns'. By simply

providing space for socially-motivated businesses, Yunus (2008) argues that we can solve the problems inherent in the "half-developed structure" of the capitalist system. Significantly, Yunus (2008) believes that this provides a viable, preferable alternative to neoliberal development: "Enter the missing piece of the global development puzzle: social business" (see section 2.4.2 for more on this point).

In contrast to Polanyi and Keynes, Yunus sees the solution to the capitalist dilemma at the meso-level, rather than the state level. He also argues that revolutionary change to the capitalist system and the state's role are not needed for change to occur. Rather, we simply need to allow for the emergence of this "promising", "new" form of enterprise, to slowly create a "radical" change (Yunus 2007a, p.11; Yunus 2008). This assertion is both intriguing and contentious, as many scholars of International Political Economy (among other disciplines) would argue that such an underwhelming attempt to change the status quo is doomed to fail from the outset. How, it could be asked, can relatively insignificant social enterprise organisations effect any sort of change at the international level, either structurally or ideologically? In order to explore these questions, we need to now move away from the traditional province of IPE and instead explore a new direction in IPE, one which explores the agency of 'everyday' actors.

1.3 Theoretical methodology

1.3.1 An 'everyday' International Political Economy approach

In their book, *Everyday Politics of the World Economy*, Hobson and Seabrooke (2007a, p.1) attempt to extend the domain of IPE beyond the conventional focus on the macroscopic topics that dominate at the international level, such as "hegemony, trade and financial flows and international economic regulatory institutions". Their reconceptualisation of the field's boundaries instead allows for an exploration of the role of everyday actors and their influence (whether considered significant or not) on world events and institutions. Central to Hobson and Seabrooke's (2007a, p.10) argument is that IPE as a discipline needs to go beyond its top-down focus on the

"winners" in the global political economy. Study of these 'winners', variously described as powerful institutions (neoliberal), state hegemons (neorealist), elite classes (Marxist) and dominant norms (constructivist), has dominated the central IPE theories, and thus limited their ability to encapsulate a more comprehensive world model.[10] This call for an extension of IPE beyond the "big end of town", in order to broaden and strengthen the field, has been echoed and supported by a growing number of IPE scholars (for example in Broome 2009, p.60; LeBaron 2010, p.891; Weber 2010, p.110).

In order to "bring the everyday actions in" to IPE, Hobson and Seabrooke (2007a, p.2) have produced a framework called "everyday IPE", or EIPE, which they contrast against the conventional "regulatory IPE" (RIPE). By focusing on everyday actors, EIPE claims to address a gap in the current RIPE approaches, exploring generally neglected but essential questions, such as "how the subordinate mediate and at times shape … [these] top-down processes" (Hobson and Seabrooke 2007a, p.4). This approach to IPE appears to have synergies with the critical scholarship championed by authors such as James C. Scott (1987) and others, who have called for greater analysis of the agency of the "subaltern" and the way their "manifold micropolitical struggles intersect with, and alter, macropolitical structures of governance, and vice versa" (Weber 2010, p.110). While RIPE approaches explore "who governs", "who benefits" and "how is the international system regulated" (Hobson and Seabrooke 2007a, pp.5-7), the EIPE approach asks "who acts and how do their actions constitute and transform the world economy" (Hobson and Seabrooke 2007a, p.12). This approach helps to reveal how bottom-up processes and everyday actions can *also* create change. "A central purpose of EIPE is neither to marginalise the importance of the dominant, nor to reify the agency of the weak. Rather it is to analyse the interactive relationship between the two" (Hobson and Seabrooke 2007a, p.15).

Underlying the EIPE framework is the conviction that non-elite agency is important. It is this assertion that allows for an interesting and enlightening examination of the central subject of this thesis, social enterprise. Social enterprises like those in Yunus'

[10] An important exception to this is the feminist IPE literature, with its ability to focus on both everyday agency and broader power structures. See below.

Grameen family, operate within the global development arena, and as such are within the sphere of influence of the dominant international economic and political institutions, ideologies and elite actors. An 'everyday IPE' approach allows us to explore the ways in which these social enterprises express their agency within, or in contrast to, these influences. It could be argued, for example, that Yunus' social business model and family of organisations, *i.e.* his social business "regime" (Hobson and Seabrooke 2007a, p.15), demonstrates how such 'regimes' can be used as "weapons of the weak" (Scott 1987) to actively defy the conventional, profit-driven capitalist ideology. While the Grameen social enterprises are no doubt influenced and shaped by the broader political economy, and manipulated by powerful institutions, they (and Yunus himself) simultaneously are agents in their own right, and may or may not influence national or global trends in turn.

This thesis deviates from, or extends on, Hobson and Seabrooke's (2007) conception of EIPE, though, by looking beyond the varying abilities of social enterprises to influence change in the global political economy system. That is, the thesis will also focus on the reproduction of political structures and contestations at a local level; exploring how the local level political economy is just as important in understanding phenomenon such as social enterprise as macro processes and relations. The role of local patriarchal power relations and norms, for example, will prove vital in understanding the relationship between Grameen Shakti and local actors (see sections 3.5 and 8.2). Indeed, authors such as LeBaron (2010, p.891) argue that it is surprising that more forays into the 'everyday IPE' field do not include a feminist element, with feminism being one of the only disciplines in political science to link the everyday 'private' with the political 'public' (see also Eschle and Maiguashca 2007, p.285). Importantly, while local power relations (such as patriarchy and patronage) are uniquely influenced by their specific circumstances, they are often informed, reinforced and/or supported by the broader national and international political power structures which are central to Hobson and Seabrooke's (2007) 'everyday IPE' approach. Study of the interrelated local and global political economies, in this thesis then, will enable a more comprehensive and nuanced account of social enterprise.

1.3.2 Solving research 'puzzles' with 'weak theory'

The theoretical methodology employed in the thesis, therefore, is less concerned with the creation and testing of specific theories concerning global political economy mechanisms, than with drawing out and framing questions, or "puzzle sets" as Hobson and Seabrooke (2007b, p.197) describe them. Puzzle sets, similarly to 'middle range theory' in sociology, are created by asking questions and investigating realities, rather than establishing a research agenda which attempts to prove or disprove a particular "grand" theory (Merton 1968). When hoping to expose the various ways that everyday actors affect world structures, theoretical models can be inhibiting, rather than enabling. Posing questions which extend beyond traditional IPE and open the door to new ways of seeing non-dominant actors and actions, requires receptivity to new observations, rather than attempts to prove or disprove existing overarching theories. Gibson-Graham (2008, p.619), in their call for the reimagining and revealing of alternatives to capitalism, also deliberately adopt what they call a "weak theory" approach. The motivation behind this, similarly, is to allow for observations to lead and embellish (rather than be limited by) our *a priori* understanding or conception of what is, or what could be.

By simply looking beyond the current capitalist landscape to imagine and enact alternatives, for example, we can open up new spaces of possibility. While some individual actors (*e.g.* social enterprises) may or may not 'succeed' in providing an alternative approach to development (*e.g.* they may be co-opted), and while social enterprise as a field may or may not 'succeed' in challenging the broader perception or enactment of capitalism, is beside the point. Analysis of how they attempt to do so, and the reactions and actions associated with this, are themselves informative and may lead to new avenues of enquiry. Importantly, such analyses can help to expose the "common sense"[11] behind our ideas of 'the economy' and the power relations this entails in both global *and* local contexts.

[11] See Gramsci (1971, p.423) and Butko (2006, p.82).

The thesis employs the world view that 'development' is an inherently political concept; it is an arena of power contestation, at local, national and international levels. The contexts in which these contestations play out are currently dominated by the neoliberal ideology, and this will feature as a strong theme in the thesis. However, it is certainly not the only structure or system which affects and directs social enterprise. As noted above, traditional patronage and cultural patriarchal systems, for example, also pervade the 'lived experience' of everyday actors. Thus, while the thesis will draw on the works of the "master theorists of the resistance" such as Gramsci and Polanyi,[12] and contemporary 'critical IPE' theorists[13] such as Cox (1983) and Gill (1995), it will do so within a broader theoretical framework which is better able to include both localised power struggles and 'everyday' forms of resistance.[14] That is, the thesis will principally employ a 'weak' theory approach within an 'everyday IPE' framework, which is suited to exploring both macroscopic and everyday mechanisms of resistance and possibility.[15]

To this end, this thesis will explore, prod and probe one case study of social enterprise. It will use 'everyday IPE' questions to ask, for example, how the actors in this case study have or have not resisted various powerful ideologies, actors and structures, and in turn, how these have influenced the case study. Questions such as, "is Yunus' social enterprise approach to restructuring the world economy more/less desirable or viable than socialism, social democracy or embedded liberalism", are interesting, but are beyond the scope of this analysis. The thesis can, however, give us greater insight into the potentials and pitfalls of this meso-level everyday actor, which, in turn, may help to shape the emerging social enterprise field, and address important gaps in the literature.

[12] See Mittleman and Chin (2005, p.18).

[13] See Eschle and Maiguashca (2007) for an analysis of critical theory.

[14] See section 2.5 for more on 'everyday resistance'.

[15] The point to be made here is that the thesis will not focus on a theoretical analysis of social enterprise from a strictly global perspective, but rather will investigate the operations and interactions of an 'everyday' case study, in order to highlight and better understand both local and global aspects of the social enterprise field, and its potential impact on international and everyday structures and people.

1.4 Developing a research strategy

1.4.1 The central research question

As noted above, the study of social enterprise is concerned with an analysis of meso-level organisations, and thus an EIPE dichotomy of 'top-down control' versus 'bottom-up resistance' does not capture the full gamut of interactions. For this thesis, extending the framework to encompass multiple layers of actors, then, is more meaningful. This can include international and national institutions and elites, at the macro-level; social enterprise organisations at the meso-level; and individuals, families and communities at the micro-level. Assuming that each of these actors has agency, and can act either with or against the others, allows for new ways of investigating the interactions which occur. It draws out questions such as: How do people's choices affect social enterprises, and social enterprises affect the people they serve? How do powerful actors (national governments, international institutions *etc*) affect both social enterprises and communities, and how do these less powerful actors, in turn, resist or support these institutions? And finally, how do underlying structures, such as capitalism, traditional patronage and patriarchy, influence the decisions and actions of these three layers of actors?

Questions such as these will help to direct the thesis' investigation of Grameen Shakti in Bangladesh and answer the central research question:

> **Is Grameen Shakti, as a social enterprise, creating an effective development alternative for rural Bangladeshis or is it, instead, influenced and directed by powerful national and international interests and actors?**

By answering this question we can learn more about the strengths and weakness of social enterprise as a development model and, importantly, whether social enterprise can provide better development results for people living in developing countries. This final component, concerning the impact of social enterprise on the lives of everyday

people, will, ultimately, require further in-depth studies in a variety of contexts.[16] By exploring the 'everyday IPE' of Grameen Shakti with this research question, though, we can add crucial information and dimensions to our understanding of social enterprise and its potential role in development.

1.4.2 Using Grameen Shakti to address the research question

The research question enables the thesis to avoid macroscopic theorising concerning social enterprise and the field of development, while enabling a case study to contribute to the formation of key debates in the field. Examination of a single case study is inherently limited, in terms of providing comparative analyses or more generalised conclusions. It does, however, allow for an in-depth analysis of, not only the activities of the social enterprise, but also its motivations, its decision-making processes and, most importantly, its approach to development and its conception of what its own role should be. Since a primary theme in this thesis is the resistance and complicity of meso-level everyday actors in a contested political environment, detailed analysis of how a social enterprise develops or adopts its own ideologies and methodologies, especially concerning development and the economy, are essential. For example, Grameen Shakti's ability to provide an alternative 'energy development' model for rural Bangladeshis is constrained and moulded by its conception of energy development, and how this reflects or resists the dominant paradigms.

Before exploring the relationships between the different (micro, meso and macro-level) actors surrounding this case study, the thesis will build a detailed picture of Grameen Shakti's history and mission foci, its perceived role in the energy development arena of rural Bangladesh, and its methods for evaluating its own success. An in-depth exploration of the case study's operations and 'world view' will enable a more comprehensive 'everyday IPE' analysis of the power contestations which influence, and are influenced by, Grameen Shakti. It will also, importantly, allow

[16] Further studies are needed to better explore how social enterprises impact the 'messy', 'everyday' lives of people in developing countries around the world. This thesis has attempted to contribute to this aim, but a comprehensive analysis requires more in-depth field research into local people's lives and views (see section 5.2.4 and section 9.4).

for a better understanding of the potential and limitations for a social enterprise like Grameen Shakti to positively benefit the lives of rural people in developing countries. And finally, this case study will help to uncover whether Yunus' approach to social enterprise, more broadly, is capable of providing an alternative to free market capitalism and neoliberal development, or whether, instead, it is still bound by a capitalist economic discourse.

1.4.3 Towards a broader 'political' research agenda for social enterprise

The central research objective of this thesis, as explored above, is to test and probe the claim that social enterprises can challenge the 'development' status quo, specifically, by studying how Grameen Shakti addresses the energy needs of rural Bangladeshis. The broader research agenda however, is to contribute to the literature that attempts to critically examine the direction and discourse of the social enterprise field itself. In the following chapter, it will be argued that the majority of social enterprise research, visible in academic articles and books, government reports and practitioner publications, is narrowly focused on the economic dimensions of the field. As noted in section 1.1, there is little political analysis of either the role of social enterprises in society or the role of the social enterprise literature in shaping this.

This situation, arguably, leaves the field less able to appreciate, or contest, the political nature of the capitalist ideology that, ironically, many social entrepreneurs wish to oppose or alter. That is, if we understand capitalism as a political process, then the current economic leaning of the social enterprise field becomes inherently problematic. This is apparent on two levels. Firstly, since most mainstream economic concepts are historically shaped by the capitalist discourse, social enterprise proponents who use only economic concepts and methodologies will find it difficult to imagine or articulate alternatives to a capitalist economic system. Secondly, without analysis of the political dynamics concerning 'who' is directing the field, 'who' is funding the field and 'who' is populating the field, social enterprise is left open to manipulation by more powerful actors. It is the combination of these two possibilities

that is most concerning, as it implies that those who are interested in maintaining the capitalist status quo would actively encourage the social enterprise field to continue with its economic discourse and focus.

In response to these potential problems, it can be argued that more political analysis and critical self-analysis is essential for the future of the social enterprise field. In support of this, there do exist a small number of researchers who focus their enquiries through a political lens (see section 2.3.2). The thesis aims, then, to contribute to this politically-focused literature, specifically through analysis of social enterprise in the Bangladeshi context. As will be seen in the final chapters of the thesis, analysis of the political environment that the Grameen social enterprises attempt to negotiate, in Bangladesh, is particularly revealing of the forms of political 'resistance' and 'complicity' which are employed by these meso-level everyday actors. It is hoped that this analysis will help to further catalyse other political studies of social enterprise in a variety of countries and contexts across the globe.

1.5 Outlining the chapters

To begin, the thesis will review the literature in the field of social enterprise. Chapter two will reveal a field in its infancy, with some key debates, but minimal theoretical and critical analysis. One of the challenges in creating theoretical depth is that the social enterprise literature spreads across several disciplinary boundaries, with focus generally on the practicalities rather than the theoretical underpinnings of the field. Despite its diversity, the social enterprise literature is currently dominated by one central discipline, the 'business school'. This has led to a focus on social enterprise's potential for addressing 'market failures', with essential political components of the field being under-analysed. Chapter two, then, will firstly overview these circumstances, and their consequences, for western countries. A more global exploration of the field, which will follow, will reveal however, that neglect of the political economy of social enterprise is most acute for developing countries. The second half of chapter two, then, will use the example of Muhammad Yunus'

microfinance social enterprise, Grameen Bank, to demonstrate the need for, and importance of, political analyses of social enterprise and how this is affecting the dynamics of development in a country like Bangladesh.

Following this overview of the social enterprise field, the thesis will continue to establish a background for the Grameen Shakti case study in chapter three, with an analysis of 'energy development' in Bangladesh. This will require, firstly, an exploration into the meanings of energy development, and the variety of ways it has been utilised, contested and manipulated in recent history. The chapter will overview the energy sector of Bangladesh and attempt to determine which conceptions of energy development have been most dominant. This will then be contrasted against an assessment of 'energy needs' for the majority of rural Bangladeshis, with an analysis of how neoliberal conceptions of development, along with local patronage and patriarchal norms, have contributed to deficiencies and inequalities in the energy sector, especially concerning the biomass cooking needs of rural women. The lack of adequate attention to rural areas in Bangladesh will highlight the potential role and politically-based challenges for a social enterprise such as Grameen Shakti.

Analysis of the primary case study will begin, in chapter four, by firstly providing a more detailed introduction to Grameen Shakti. This chapter will explore Grameen Shakti's history, its organisational structure and its technologies. It will also, importantly, provide a historical overview of Grameen Shakti's mission objectives, including what it aims to accomplish in terms of energy development in Bangladesh. It is this analysis which will be used, in chapter five, to develop a suitable evaluation framework for Grameen Shakti, based on its own criteria for 'success'. Chapter five will also describe the research methodology employed in the collection and analysis of data concerning Grameen Shakti. Primarily, the data collected consisted of field observations, interviews and database statistics, which were collected by the author during three months of field research in Dhaka and villages in Bangladesh in 2008-2009.

The initial analysis of Grameen Shakti's activities will then be conducted and presented in chapter six. The task of chapter six is to assess Grameen Shakti's ability to address energy development in Bangladesh, as construed via its own criteria and objectives. This will result in a predominant focus on Grameen Shakti's success in disseminating energy technologies, through product sales, to rural Bangladeshis. The chapter will begin the evaluation process with statistical analysis of Grameen Shakti's sales, followed by more qualitative analysis of Grameen Shakti's other indicators of success.

The assessment will be finalised in chapter seven, which will attempt to draw together the various themes which arose in chapter six. Chapters six and seven will provide interesting insights into Grameen Shakti's ability to address energy 'market failures' and provide better energy services for rural people. It will highlight Grameen Shakti's success in providing electrical energy for over a million rural Bangladeshi households, along with its difficulties in reaching the more marginalised people and energy needs. Ultimately though, these chapters will enable us to see how Grameen Shakti's conception of energy development (and its understanding of the role that a social enterprise should play, as demonstrated in its chosen 'measures of success') has influenced its choice of activities, and thus its impact on rural people. That is, this initial analysis will reveal the limitations of an economics-focused assessment of Grameen Shakti's operations, and the importance of applying a political lens to an analysis of social enterprise in development.

In order to accommodate this aim, chapter eight will use an 'everyday IPE' approach to explore the various interactions and power relations that exist between Grameen Shakti, rural Bangladeshis, and macro-level actors such as the World Bank and the Government of Bangladesh. It will begin, firstly, by exploring how patronage and patriarchal norms have shaped Grameen Shakti's attempts to address energy inequalities at a local level. The apparent *in*ability of Grameen Shakti's current market-oriented mode of operation to address more complex socio-political issues will raise important questions about the limitations of social enterprise in development.

In order to gain a better understanding of why Grameen Shakti has chosen this market-focused approach to development, chapter eight will then explore the national development context in which Grameen Shakti operates. This analysis will reveal how the antagonism and cooperation between Bangladeshi NGOs and the Government and international aid actors, respectively, has shaped the field, and moved it in a more pro-market direction. Grameen Shakti, it will be shown, has inevitably been affected by these circumstances, and adopted an approach of 'pragmatic resistance' in order to deliver its energy objectives. In this difficult environment, Grameen Shakti's achievements in addressing basic energy needs become all the more laudable. The chapter will end, though, with a word of caution: While Grameen Shakti and other social enterprise actors in Bangladesh may be deliberately minimising their resistance to Government and donor demands in a survivalist strategy, their complicity with neoliberal norms are being used to further control and depoliticise the development sector. This final observation, it will be shown, is not confined to Bangladesh, as it is also seen with social enterprises in other developing countries, and has synergies with the social enterprise experience in western countries (as explored in chapter two).

The thesis will conclude, in chapter nine, by reviewing how an 'everyday IPE' analysis of this Bangladeshi case study can enhance our understanding of the field. It will attempt to place Grameen Shakti's experience into the broader political economy of social enterprise, and will draw conclusions as to the current trajectory of the field and its role in global contestations over the capitalist hegemony. The thesis will end, then, by exploring the very pressing need for more critical and informed political analysis of social enterprises, in a variety of context and environments across the world.

1.6 Conclusion

The motivation for this thesis is to contribute to the emerging field of social enterprise, and, in doing so, add to the growing forum of 'alternative capitalism' imaginings and practical explorations. The aim of the thesis is not to vilify capitalism as an economic

model, or to assume that any alternative would be better.[17] Instead, the thesis aims to simply contribute to a critical exploration of alternatives to the status quo, rejecting the "capitalocentrism" that Gibson-Graham (2008, p.623), among others,[18] have identified, and the ideological dominance of the neoliberal policies that follow. Exploration of other options, and their potentials and pitfalls, will add to our knowledge of what political-economic realities are possible.

This thesis hopes to participate in this broader goal, with an exploration of the very topical and fascinating prospect of the social enterprise. Experiments in creating a more socially-aligned economy, with social enterprises and its hybrids, may not necessarily have the transformative effect that proponents wish for, but nonetheless can still act as 'islands of change', helping to challenge the capitalist hegemony and open up new realms of possibility. As discussed earlier, however, the social enterprise field is still in its early stages of development, with the variety of different forms of social enterprise, especially in developing countries, yet to be fully explored. Thus the boundaries of the field, and the debates which define the literature, need to be enriched with a multitude of varied case studies. This thesis hopes to contribute to this aim, using an open-ended, 'everyday' IPE approach, which can add new depth to the field.

[17] Indeed, pre-industrialisation economic models such as feudalism, and many current informal economic systems, are or were embedded with patriarchal norms and class or caste discrimination (Sandbrook 2011, p.4).

[18] See Escobar (1999).

Chapter 2 - Social enterprise:

Claims, critics, and gaps in the literature

2.1 Introduction

The rise of social enterprise as a distinct field of study is a relatively recent phenomenon, though it builds upon a long human history of experiments in the 'social economy'. The first aim of this chapter is to review the literature concerning this comparatively new field of social enterprise. It will do so with an exploration of the various contested definitions, boundaries and claims of those in the field. A prominent theme which will emerge is the influence of the business schools and western government departments, in shaping and directing the social enterprise field. This review will reveal that while there has been some critical analysis of these trends, there is generally a dearth of literature concerning political analysis of the broader social enterprise field. This is especially so for the social enterprise field in developing countries.

In an attempt to help address this gap, the chapter will explore the philosophy and social enterprises developed by Muhammad Yunus in Bangladesh, with specific focus on his microfinance organisation Grameen Bank. This introduction to the Grameen social enterprises will help to build a background for the analysis of Grameen Shakti in the proceeding chapters. It will also, importantly, help to illustrate how a political economy perspective can aid in creating a greater understanding of the influence of powerful institutions and ideologies over social enterprise initiatives, and consequently, the challenges involved for those 'everyday' social enterprises that wish to create change.

2.2 What is social enterprise?

While a social enterprise can be most simply described as an organisation with both social and financial goals, consensus on a more comprehensive definition has yet to emerge in the literature. Indeed, the boundaries of the field are still a matter of contentious debate. It is the range and variety of social enterprise definitions and conceptions in the literature however, that lends fascinating insight into the history, and possible futures, of these attempts to challenge the existing market orthodox. With this in mind, we will firstly attempt to capture a broad working framework of the social enterprise field. Analysis of the literature will reveal that, as mentioned in chapter one, while there do exist competing conceptions of social enterprise and its boundaries, thus far the field has been dominated by economic theories and debates.

2.2.1 Merging spheres- Challenging the separation of 'the economy' and 'the third sector'

Contemporary society is often conceptualised as consisting of three separate spheres, namely the market economy, the third sector, and the state (Kothari and Minogue 2002, p.13). In the neoclassical economic model, the primary actors in each of these spheres, respectively, are: businesses, driven only by financial motivation; nonprofit/non-government organisations, motivated only by social concerns; and government, which, in a free-market capitalist system, is expected to maintain only minimal control over or assistance to either. Despite the theoretical separation of these spheres, in reality there has always existed a diverse array of actors and organisations which have operated 'between' the spheres, effectively blurring the theoretical boundary lines (Alter 2007, p.2; Asongu 2007, p.1). The study of social enterprise has arisen in response to a recent increase in the number and variety of ways that this 'blurring' has occurred (Alter 2007, p.1; Barraket 2009, p.1). As we will now explore, interest in this social enterprise phenomenon (Edwards 2008b, p.18) has come from both sides of the market-third sector divide.

Many actors from the third sector, including charities, nonprofits, non-government organisations (NGOs), community sporting groups and church groups, have a history of finance-oriented strategies or practices. Some of these organisations have used sales-based income generation or fee-for-service fundraising strategies as an integral part of their operations (Alter 2007, p.1). For example, the 'Red Cross' runs first aid courses which train participants in emergency health responses while generating a revenue for the charity (www.redcross.org.au/firstaid); 'St Vincent de Paul' produces revenue by selling donated clothing and furniture at discounted prices (www.vinnies.org.au/vinnies-centres-national); local sporting and community organisations often rely on fees from members to fund their activities. Recently, there has been increasing pressure and expectation for nonprofit organisations, in general, to adopt more business-like procedures and accountability standards. This is a trend that SustainAbility (2003, p.51) sees as increasing, as "the whole NGO landscape is tilting not just towards partnerships with business, which many NGOs still see as a slightly more sophisticated form of philanthropy, but towards market-based solutions, market mechanisms and, for better or worse, market dynamics".

Concurrently, there has also been increasing pressure on businesses to contribute to social goals, or at least be seen to manage any possible harm to society or the environment. National and international businesses have taken up a variety of Corporate Social Responsibility (CSR) activities, such as bank-sponsored community services (for example see www.rescuehelicopter.com.au) or environmental projects by large gas and oil multinational companies (MNC) (see www.shell.com.au/home/content/aus/environment_society/). There has also been support for closer working ties between businesses and NGOs on an international scale. The United Nations' 'Global Compact' was established in 2000 in part to encourage the involvement of MNCs in development, through greater interaction with NGOs (www.unglobalcompact.org/). "Bottom of the Pyramid" market strategies (*i.e.* targeting the numerous low-income consumers of developing countries) are being promoted by the World Bank as a practical way for MNCs to make a profit while servicing an underserviced sector of developing economies (Prahalad 2006; World Bank 2008a).

In sum, we have seen moves by the third sector towards more business-like practices and relations, and moves by the business sector towards more social responsibility and community involvement. In a step towards further and more integrated 'blurring' of the economic and third spheres, there has concurrently been rising interest in organisations and entrepreneurs who deliberately situate themselves in the centre of these interactions. That is, "a growing group of practitioners, investors and philanthropists are advancing strategies that intentionally blend social, environmental and economic value" (Emerson and Bonini 2003, p.1). This, along with the shifting goals of businesses and nonprofit organisations, has been the driving force behind the growing interest and study of social enterprise.

2.2.2 The rising field of social entrepreneurship

In this new field, it is the entrepreneurial actor, rather than the social enterprise organisation itself, which has taken centre stage. Some of the pioneering social entrepreneurs, according to Alter (2007, p.2), include: John Durand, who began the first "social firm" with "disabled employees" in 1964; Mimi Silbert, who established the 'Delancy Street' social enterprises for "recovering addicts" in the 1970s; and Muhammad Yunus, who popularised microfinance for "poor women" with Grameen Bank in 1976. Most recently, it is the actions of social entrepreneurs such as the philanthropic businessperson Bill Gates, which have captured public imagination and proven popular with the media. "The nascent field of social entrepreneurship is growing rapidly and attracting increased attention from many sectors. The term itself shows up frequently in the media, is referenced by public officials, has become common on university campuses, and informs the strategy of several prominent social sector organisations, including Ashoka and the Schwab and Skoll foundations" (Martin and Osberg 2007, p.30).

The concept of social entrepreneurship has been most championed by sectors of the 'business school' (Nicholls and Cho 2006, p. 99), such as the 'Social Enterprise Initiative' (www.hbs.edu/socialenterprise) and the 'Center for the Advancement of Social Entrepreneurship' (www.caseatduke.org), in the Harvard Business School and

Duke University's Fuqua School of Business, respectively. Most descriptions of the field start with an exploration of the term entrepreneur, and expand this to claim that social entrepreneurs use their business expertise (or capital) to address community concerns in 'business-savvy' ways (Dees 2001; Drayton 2006; Martin and Osberg 2007). The social entrepreneur is venerated in this literature as a "change agent" in society, bringing market-based, Schumpeter-type innovations to solve previously intractable social problems (Dees 2001, p.4). As the business school is predominantly informed by economic scholarship it is perhaps not surprising that the entrepreneurial individual is the locus of the field.

Aside from the Schumpeter-informed business school supporters of social entrepreneurship, there exist a variety of approaches to the field. Interestingly, these appear to accept or challenge the market-led conception of capitalism to varying degrees. "Social entrepreneurs are not united by a single ideology and span the political spectrum from the neo-liberal to communitarian, progressive and neo-Marxist positions" (Gray *et al.* 2003, p.143). "Blended Value" proponents claim that, rather than simply applying business techniques to social problems, a more "transformative" combining of the economic and social spheres is achievable by leveraging the potential synergy between financial and social goals (Emerson and Bonini 2003, p.119). "Social innovation" advocates appear to extend one step beyond this blending of market and societal goals, to focus more on how the market itself can be changed to address social problems (see Edwards 2008b, p.18). And finally, apart from these market-based economy models, we can also identify a number of other approaches to social entrepreneurship which adopt more communitarian interpretations, such as those where the community leader is the "visionary" entrepreneur of new community-based approaches to local problems (Barraket 2009).

Barraket (2009) and Gray *et al.* (2003) argue that there exist a wide range of less acknowledged actors who seek to challenge the capitalist market-based conception of the social-economic divide. The dominant paradigm in the literature, however, is directed by the business school proponents who, primarily, see the role of the social entrepreneur as bringing the benefits of the market to bear on social problems. The

social entrepreneurial discourse, therefore, has tended towards more mainstream economic concepts, with an emphasis on innovative individual dynamism, rather than political structural change. As noted by Nicholls and Cho (2006, p.99), “the chief theoretical location of social entrepreneurship has been within business studies with a methodological preference towards strategic reflection on specific examples of innovative praxis often underpinned by profiles of 'hero' social entrepreneurs”.

The role and definitions of social enterprise are entangled with the literature for social entrepreneurship and the social entrepreneur (for example in Dees 2001; Edwards 2008b; Martin and Osberg 2007; Thompson 2008). There is on-going debate over whether social enterprise should be considered a sub-set of social entrepreneurship, or whether it should be analysed in a field of its own (Thompson 2008, p.159). According to Alter (2007, p.12): “In its widespread usage, ‘social entrepreneur’ is the individual and ‘social enterprise’ is the organisation. Therefore, social enterprise is an institutional expression of the term social entrepreneur”. Contrastingly, though, it can be argued that the differences in the usage of these two terms go beyond their common linguistic roots and reflect important differences in the ideological leanings of the fields.

The social enterprise literature, in comparison to social entrepreneurship, is relatively less focused on entrepreneurial innovativeness, includes a wider range of prominent voices, and is defined more in terms of an organisation’s structure than an individual’s aspirations. Importantly, shifting the focus from the person (entrepreneur) to the organisation (enterprise) raises a series of questions concerning what ‘space’ these organisations should exist in, and what balance is expected between their social and financial objectives (as explored later). Interest in the field of social enterprise by nonprofit organisations, government bodies and the business sector social entrepreneurs, lends diversity to the social enterprise field. It also, as explored below, makes defining the boundaries of the field all the more difficult.

2.2.3 Exploring the boundaries of the social enterprise field

There is an ongoing, fascinating debate over the boundaries of the social enterprise field (Alter 2007; Dees 2001; Emerson and Bonini 2003; Martin and Osberg 2007; Minard 2009; Nicholls and Cho 2006; Thompson 2008). The social enterprise landscape encompasses a variety of hybrid organisational forms, from co-operatives and social-inclusion organisations, to 'green' businesses and social entrepreneur-driven projects (see Alter 2007; Barraket 2008; SustainAbility 2003; Ruli and Hoxha 2001). Attempts to identify social enterprise, however, reveal a field which is more defined by its diversity than its consensus.[19]

There are a variety of conceptions of social enterprise in the literature, with "definitions of social enterprise [having] been broadly debated for over 15 years" (Barraket 2009, p. 1). In fact it appears that each discipline defines social enterprise in its own image. The 'Nonprofit Good Practice Guide' (n.d.), for example, defines a social enterprise as; "A *nonprofit* venture that combines the passion of a social mission with the discipline, innovation and determination commonly associated with for-profit businesses [italics added]". Kim Alter (2007, p.12), Managing Director of 'Virtue Ventures LLC' (limited liability company), alternatively, describes a more market-oriented definition: "A social enterprise is any *business* venture created for a social purpose– mitigating/reducing a social problem or a market failure– and to generate social value while operating with the financial discipline, innovation and determination of a private sector business [italics added]".

The United Kingdom is one of the first governments to develop its own definition of social enterprise. According to the United Kingdom's (UK) 'Office of the Third Sector' (2006, p. 10): "A social enterprise is a business with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or in the community, rather than being driven by the need to maximize profit for shareholders and owners". Interestingly, it is the UK government's Office of the Third Sector (rather

[19] See Nicholls (2006, p.5) for an interesting overview of how the concept of social enterprise also varies according to the specific regional context.

than its 'Department for Business') which appears most interested in the potential of social enterprises to act as "businesses" which can "maximize profit" for the public good. Furthermore, its use of the phrases "primarily social" and "principally reinvested" still leaves room for interpretation (Lyon and Sepulveda 2009), especially in regards to the enterprise's intended role and bottom-line (Toner *et al.* 2008, p.3). These are points of interest that we will return to later.

In theory, the social enterprise field attempts to challenge a neoclassical economic assumption that the market and the third sector are (or should be) necessarily separate. The social enterprise *organisation* is the manifestation or form associated with this challenge, and thus the boundaries of the social enterprise field are often defined in terms of the organisations' place within the overlapping 'space' between the market and the third sector. This is commonly visualised on a hybrid spectrum, with a traditional for-profit business at one end, and a traditional nonprofit organisation at the other. In Alter's typology (Alter 2007, p.14), social enterprises are differentiated from other types of hybrids (see figure 2.1 below); whereas others, such as Dees (2001), more broadly define social enterprise as any enterprise posited along the spectrum.

Figure 2.1: A social enterprise hybrid spectrum, as constructed by Kim Alter (2007, p.14).

An overview of the literature, however, reveals that there are many characteristics or dimensions which need to be compared when assessing where an organisation sits between the market and the third sector, apart from their designation as 'for' or 'not-for' profit. It is helpful, then, to move from a single-dimensional (in figure 2.1) to a

multi-dimensional hybrid spectrum.[20] To enable a more complex comparison of hybrid organisations, the radar graph below (figure 2.2) is constructed with a number of axes, each of which describes a different way of distinguishing where an organisation may 'sit' in the hybrid space between the market and third sector (that is, how closely it resembles a conventional business or nonprofit organisation). Visualisation of several (hypothetical) hybrid organisations, using just six dimensions (axes), helps to highlight the complexity in identifying the boundaries of the field. It can also be used to demonstrate how the form of a social enterprise (for example, its funding source or level of market involvement) is influenced by those who are defining and supporting it.

A social entrepreneur-initiated hybrid, for example, is proposed to be slightly more business-like than a UK government-supported social enterprise, as the social entrepreneur field is more populated by business actors, while the UK government is targeting third sector actors. The only exception to this is in the 'change focused' category, as most social entrepreneurs deliberately emphasise the 'entrepreneurial change' or 'agent of change' aspect of a social enterprise, while the UK government (as it will be argued shortly) is more interested in supporting forms of social enterprise which can help to maintain the liberal economic status quo. This multi-spectral visualisation of the various social enterprise hybrid forms, therefore, appears useful in drawing our attention to the ways in which a particular social enterprise form may be promoted (and even recognised or defined) in ways which best complement the agenda or background of the creator.[21]

[20] Alter (2007) also explores several different characteristics, but only as sub-categories of her definition of social enterprise, rather than the entire hybrid spectrum.

[21] Special thanks go to Dr Peter Mayer for his suggestion to use a radar graph. The radar graph representation of social enterprise hybrids will prove particularly useful later in the thesis (see chapter seven).

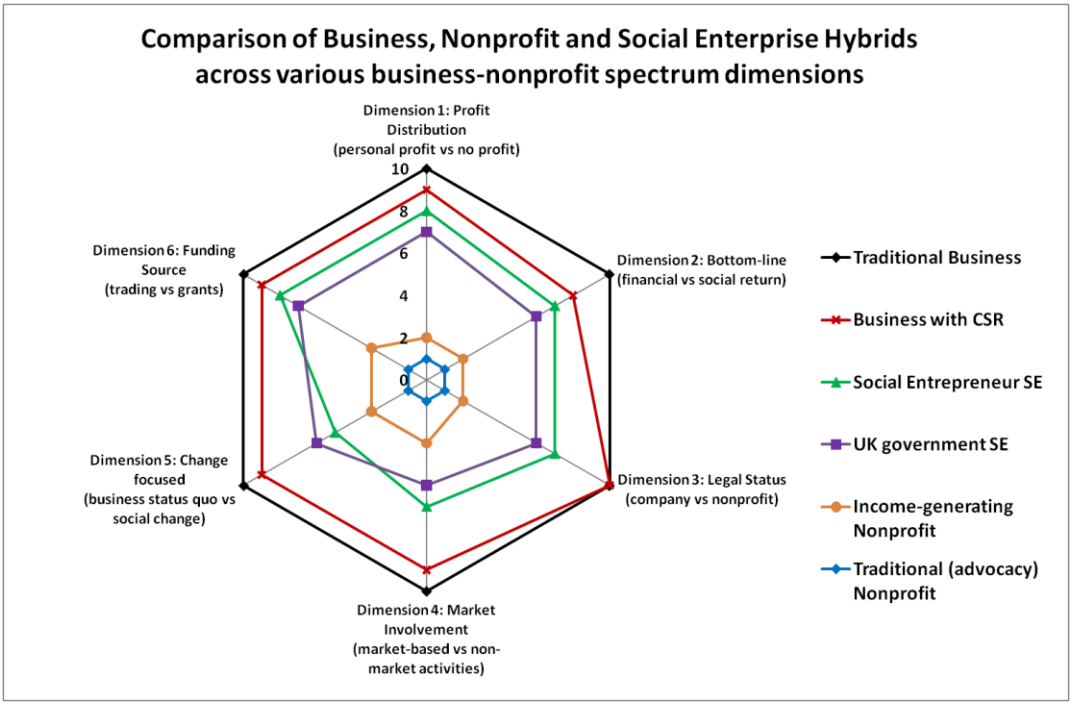

Figure 2.2: A social enterprise hybrid radar graph, comparing hypothetical social enterprise (SE) hybrids.

2.3 Social enterprise - claims and critics

The preceding sections have explored various definitions and conceptions of social enterprise, and attempted to illustrate the multiple ways that social enterprise organisations can negotiate the space between the market and the third sector. It can be argued that defining and bounding the field is an inherently political act, with the dominant discourses and actors able to direct and restrict our interpretation of how a social enterprise should look and act. This is similarly true for the primary claims concerning the benefits of social enterprise, with the predominant emphasis being on its ability to solve 'market failures'.

2.3.1 Social enterprise claims – addressing 'social' market failures

The dominance of business school practitioners and academics in the field of social entrepreneurship has resulted in many of the debates surrounding social enterprise

being imbued with economic discourse. Consequently, one central theme, which has been the subject of sustained discussion and debate, is the ability of social enterprises to address 'social' market failures. As highlighted in a UK government review of the field, "there are many models of social enterprise operating across these countries, often in ways that address specific market failures" (Office of the Third Sector 2006, p.25).

Market failures can occur as a consequence of high transaction costs, the influence of external factors on fair pricing, and asymmetric information between buyer and seller (Sawada 2006), all of which can lead to a lack of goods, services and/or loss of employment and income. 'Social' market failures involve the market failures which affect disadvantaged groups in a society. Neglect by the traditional market is thought to lead to a raft of social problems in marginalised areas. Communities affected by long-term or systemic market failures, for example, often have higher levels of discrimination, youth disaffection and long term unemployment (see Ruli and Hoxha 2001 for an example). Due to their double bottom-line, social enterprises claim to be able to solve the market failures that normal businesses cannot 'afford' to address, including these 'social' market failures and their corresponding social problems (Nicholls and Cho 2006, p.103; see Phills and Denend 2005). Social enterprises, consequently, have been acclaimed for providing employment for marginalised groups in Australia (Barraket 2008, p.5), smoother market transition in Albania (Ruli and Hoxha 2001, p.3), and "tackling social exclusion" in the UK (Office of the Third Sector 2006, p.57).

Neoclassical economists such as Tyler Cowen (1988) have argued, however, that 'market failure' is a misnomer, as many apparently intractable problems can yet be solved with innovative market-based solutions. This implies that it is business stimulation, not social enterprise, which is needed to solve even 'social' market failures. Indeed, some argue that businesses should not attempt to balance social and financial bottom-line objectives (Economist 2002, November 21; Economist 2004, January 22; Economist 2005, January 20), as "the social responsibility of business is to increase its profits" (Friedman 1970). It is argued that this goes beyond a business'

(stockholder) mandate and threatens to undermine the economic benefits that the market brings to society. “Yet, even allowing for some recent corporate scandals and the odd crooked chief executive, most law-abiding companies do good simply as a byproduct of their pursuit of profits - as Adam Smith first proclaimed over 200 years ago” (Economist 2002, November 21). Social entrepreneurs, in response, argue that social enterprise is the perfect ‘business’ solution to ‘social’ market failure. Many use Schumpeter-type arguments that entrepreneurial change is needed to solve the entrenched social problems caused by traditional market neglect (Alter 2007, p.18; Drayton 2002, p.120; Nicholls and Cho 2006, p.103).

As could be expected, the attempt by social enterprise to bridge the separation of the economy and society is viewed as ‘dangerous’ under a neoclassical economic philosophy. Interestingly, though, the field of social enterprise has not aroused the same antagonism from western governments. Rather, as noted above, the UK and Australian governments for example, have both been supportive of social enterprise, and are funding various projects and studies in the field (see, for example, the ‘Queensland Social Enterprise Partnership’ www.socialventures.com.au/social-enterprise-development/queensland-social-enterprise-partnership). This support, tellingly, has predominantly focused on the adoption of social enterprise practices in the third sector, and thus raises, as we will now explore, pertinent questions about the role of social enterprise in the ‘liberalisation’ agenda of various western governments.

2.3.2 Social enterprise critics – co-option by government

The social enterprise literature engages in interesting economic debates concerning market failure and other, more operational, aspects of social enterprise, such as organisational structure (for example Walsh and Lenihan 2006). A review of the literature reveals, however, that analyses of the underlying political economy are not as prevalent (Edwards 2008b, p.63). As argued by Barraket (2009), and explored below, this is a matter of concern on a number of levels: “[W]e need to recognise the effects of relations of power not just on the quality of [social enterprise] network interactions,

but on the ways in which the dominant perspectives frame problems and their solutions".

Despite a general dearth of political critique, some academics have introduced important arguments to this end (see, for example, Barraket 2009; Gibson-Graham and Cameron 2007; Gray *et al.* 2003; Toner *et al.* 2008). The most prominent issue that arises in this literature concerns the growing interest and support, by some western governments, in the role of social enterprise practices within the third sector. One of the most pertinent questions raised is whether, by supporting income-generating social enterprises, these governments are attempting to create a firmer ideological stance for cutting-back on welfare spending.

This argument, interestingly, exists in counter-point to the popular perspective that social enterprise 'empowers' people to escape welfare. As noted above, social enterprise is being heralded in many quarters as a solution to unemployment in western countries, and a promoter of smoother market reform in transitional countries in eastern Europe. "While by no means a panacea for the multiple social disadvantage that so often characterizes social exclusion, the social business model … offers an innovative approach to *transforming passive welfare recipients into active citizens* [italics added]" (Ruli and Hoxha 2001, p.3). As observed by Gibson-Graham and Cameron (2007, p. 22), however, "[f]or some, this kind of government interest signals co-optation of the highest order and is proof that these enterprises are just part of the neo-liberal roll back of the welfare state".[22] Social enterprise, it appears, can be situated in broader 'government to governance' debates, concerning the continuation of the New Public Management agenda and the liberalisation of the third sector.

If the creation of a liberalised, self-financing third sector is indeed the aim of some western governments, then it can be speculated that it is the most market-compatible

[22] While Gibson-Graham and Cameron (2007) recognise the potential for social enterprise to be co-opted by government, their primary goal is to highlight how social enterprise has more potential than is recognised by this argument alone. See section 2.5 for a discussion of 'complicity and resistance' by social enterprises.

social enterprises that will attract government support. Barraket (2009) notes that: "In the case of social enterprise in Australia, this situation has clearly manifest in government and corporate philanthropic partnerships which select organisations that support very specific models of social enterprise". The rising popularity of social enterprise in UK government circles has prompted some authors to warn about the tendency for new social enterprises to comply with a narrow UK government market-based model, and the potential for mission drift by existing social enterprises. As noted by Toner *et al.* (2008, p.4):

> [G]iven the hegemonic liberal policy discourse of public service delivery, it is also evident that … market-based thinking on meeting social needs … might become more deeply internalised within social enterprise activity than the social commitment. Organisations and entrepreneurs who then want to act differently may find difficulties in doing so…

Rather than creating a new space between the economy and society, then, it appears that social enterprise has the potential to effectively 'push' more traditional third sector organisations out of the funding pool. A study by Gray *et al.* (2003, p.144) of social work in Australia, for example, draws our attention to the relationship between inadequate government funding for traditional welfare agencies, and the rise of social enterprises as a response to "resource constraints in the non-profit community". It can be speculated that a market-focused third sector, populated by social enterprises rather than advocacy-based nonprofit organisations, would not only be less costly for governments, but would also be less politically confrontational. Such criticisms prompt us to question whether social enterprise practitioners are being actively encouraged to conceptualise their aims in terms of addressing more economic problems, such as market failure, than more contentious issues, such as structural inequalities. Specifically, the economic discourse of 'market failure', 'individual entrepreneurism', 'employment' and 'innovation', as employed in the mainstream social enterprise literature, is compatible with a liberal conception of how to address disadvantage. This is a point of interest that we will return to later.

There has been a mixed response, by traditional third sector actors, to the rising pressure to behave more like social enterprises (specifically, to focus more on income-generating activities). Some warn against the dangers of mission-drift and the moral conflict of a double bottom-line, while others are embracing the opportunity to become more financially independent (SustainAbility 2003, p.43). Within the social enterprise literature, however, political analyses, such as in the studies above, are still generally scarce. That is, currently there is insufficient analysis of the political motivations underlying social enterprise's role in western societies. This has potentially significant consequences for the social enterprise field; especially for those social entrepreneurs who wish to challenge the capitalist status quo. This lack of political analysis, as we will now explore, is considerably more pronounced for social enterprises in developing countries.

2.3.3 Who is analysing social enterprise, and where?

A thorough analysis of the current social enterprise field requires not only an exploration of the boundaries of the field and the debates, but also an analysis of 'who' is involved in discussing these key issues. The analysis thus far has focused on the dominance of the economic perspective, and the business schools and governments in particular, in the social enterprise and social entrepreneurial literature. Another important theme which emerges when we explore 'who' is studying this field, however, involves the location of the researcher, and the geopolitical foci of the studies. A review of the social enterprise field, with these questions in mind, reveals that the social enterprise literature is predominantly based in, or focused on, western economies and societies.[23]

Many academics contributing to the social enterprise literature, including those who bring political analysis to the field, are residents of the US, the UK, Australia or Europe, with a primary focus on their own communities and/or countries. The majority of the

[23] In the last few years several authors have begun to address this gap in the literature, including Robinson *et al.* (2009), Defourny and Kim (2011), Kerlin (2010), Fury (2010). The majority of these studies, however, still originate from an economics rather than a political science background.

government-commissioned literature, also, originates from and refers to western and transitional eastern European economies (see Barraket 2006; Ruli and Hoxha 2001). Even a supposed "global" study by the UK government, has not progressed beyond these borders: "As part of the independent review of the social enterprise strategy, an analysis was conducted of research on social enterprise policy and practice at European and *global scales*. The study focused on developments in five countries: *France, Germany, Italy, Poland* and the *United States* [italics added]" (Office of the Third Sector 2006, p. 25). As noted by Schwartz (2009), CEO of the social enterprise 'ClearlySo': "At the annual Skoll World Forum, (the "Davos of social entrepreneurship") the overwhelming majority of speakers, experts and practitioners came from Anglo-Saxon countries, particularly the US and UK".

While the literature and analyses of social enterprise in western countries is enhancing our understanding of the field and the key debates within it, it can be queried how well this represents the field in developing economies. The social enterprise activity in developing countries is substantial, including renewable energy enterprises in Africa (Brent 2009), waste-picker cooperatives in Latin America (Medina 1997) and microfinance hybrids across the Asia Pacific (Chowdhury *et al.* 2006; Coleman 2006; Daley-Harris 2005; McGuire 2000; Moxham 2005; Nghiem and Laurenceson 2005). Indeed, many of the 'success stories' in the social entrepreneurship practitioner material involve social enterprises in diverse regions of the world (for examples see Mair and Schoen 2007). However, the majority of published and online material concerning social enterprise in developing countries is still mediated and supported by western intermediaries, such as in 'Ashoka' (www.ashoka.org) and 'The Bill and Melinda Gates Foundation' (www.gatesfoundation.org). As noted by Schwartz (2009): "There is openness to models from the developing world. But in many cases these models are deployed by Anglo-Saxons who move to these poorer countries". While many of these western partners do analyse the impact, viability and scalability of their social enterprises in developing countries, it can be argued that they do not yet sufficiently engage in critical analysis or debate about the informal market environment, contending political influences, development obstacles, or other issues pertinent to a developing country context.

Some authors, such as Michael Edwards (2008a, 2008b), have attempted to more critically analyse social entrepreneurship in developing countries, which Edwards labels "philanthrocapitalism". Philanthrocapitalism, as originally coined by Matthew Bishop in 2007 (Edwards 2008b, p.12), is used to describe the market-focused philanthropy by wealthy, western businesspeople, attempting to aid the poorer sectors of developing countries. While Edwards' analysis has helped initiate a debate about how philanthrocapitalism interacts with development goals (see Edwards 2008a), it still does not address or give voice to the situation of social enterprises which are initiated, run and financed by people living in developing countries, or those supported by local governments, international governments, banks or aid agencies, which constitutes a vast array of social enterprises in developing countries. Edwards (2008a) recognises this limitation himself, citing the need for more research in this field, beyond philanthrocapitalism: "My critique is far too generalized, and while it may apply to some forms of venture philanthropy it does not describe the reality of many other experiments, especially in the field of social enterprise, which itself is very diverse".

One form of social enterprise which, alternatively, has had ample critical analysis by a vast array of commentators from across the globe, is microfinance. Most microfinance institutions and researchers, however, do not generally identify themselves as belonging to the province of social enterprise, and thus have not yet entered into the broader social enterprise debates. Muhammad Yunus from Bangladesh, as one exception, does define his own Grameen Bank microfinance organisation as a form of social enterprise. In fact, as noted in chapter one, Yunus (2007a, pp.78, 101) describes all of the organisations in his Grameen 'family' as belonging to the social enterprise field: "The Grameen companies represent a first, evolving sketch of the world of social business, and a model for what I hope will be many thousands of companies serving diverse social needs the world over".

Yunus has produced a detailed explanation for how social enterprise organisations hope to benefit the world and help create an alternative to the current economic system. His conception of social enterprise certainly does not provide a blanket description of all locally-run social enterprises to be found throughout the developing

world. However, the Grameen family, and Yunus' writings, do provide us with an interesting array of social enterprises to explore, and theory to deconstruct. In the following we will extend on the introduction to Yunus' philosophy presented in chapter one, to better explore and explain his model, its aims, and the criticisms raised against it in the literature.

2.4 Yunus' Bangladeshi social enterprises – claims and critics

2.4.1 Yunus' social business model

Muhammad Yunus has established over 32 different social enterprises in Bangladesh over the last 30 years, under the label 'Grameen' (YunusCentre 2009). The Grameen social enterprises are all Bangladesh-based, separate entities (see Yunus 2007a, 2008). They range from the most business-like 'Grameen Knitwear' factory to the most charity-resembling 'Grameen Shikkha' (Education) schools. Seven Grameen social enterprises are described below, chosen for their representation of the wide array of social enterprises initiated by Yunus in Bangladesh.[24] As we will see, the breadth and variety of social enterprises under Grameen alone, challenges the current boundaries found in the social enterprise literature.

'Grameen Bank' is a microfinance institution, initiated by Yunus in 1976 (see www.grameen-info.org). It is a registered business, with its microfinance clients being the major shareholders. Its mandate is to alleviate poverty and empower women by providing small collateral-free loans to groups of poor rural women for income-generating activities. 'Grameen Shakti' (as noted in chapter one) is a market-oriented nonprofit energy business, founded by Yunus in 1996 (see www.gshakti.org). Its mandate is to provide renewable energy products to rural households and businesses. 'Grameen Danone' sells nutrient-fortified yoghurt produced in a Bangladeshi factory

[24] The overview here is drawn from Grameen websites and from interviews and observations from field research by the author in 2008-2009 (see chapter five). The descriptions below will prove useful in chapter seven.

(see www.muhammadyunus.org/Social-Business/grameen-danone/). It aims to improve the nutrition of rural children, employing local farmers and saleswomen. 'Grameen Eye Hospital' provides eye health services, with income-adjusted prices (see www.muhammadyunus.org/Social-Business/grameen-gc-eye-care-hospital/). It uses the payments from wealthier clients to fund its activities in poorer rural areas. 'Grameen Shikkha' provides a variety of educational services, schooling and scholarships to children in poor rural and urban areas (see www.grameen.com/grameen/gshikkha/). It relies on external funding from government and individual donors, with unique financing arrangements. 'Grameen Knitwear' exports clothing made in a Bangladeshi factory (see www.grameenknitwear.com/). It operates similarly to a traditional business but is owned by two other Grameen nonprofit social enterprises, which benefit from any profits produced by the company.

As exemplified here, each of Yunus' social enterprises addresses a different market or social concern, employing a variety of approaches and funding arrangements. All of these social enterprises, however, fit within one of Yunus' two definitions of social enterprise. These combine to create his "social business" model (Yunus 2007b, p.14). Yunus' first form of social business is one which reinvests all surpluses back into the social business in order to increase the "social benefit" it aims to create (Yunus 2007a, p.22); it is most often, legally, a nonprofit organisation (for example, Grameen Shakti and Grameen Shikkha). "Profit would be ploughed back into the company to expand its outreach and improve the quality of its product or service. A social business will be non-loss, non-dividend company" (Yunus 2007a, p.11). Yunus' other form of social business *does* consider its surplus as profit, but the owners of the social business (who receive any profits) are either disadvantaged people or nonprofit organisations (for example, Grameen Bank is owned by its borrowers, and Grameen Knitwear is owned by Grameen nonprofit social enterprises). This form of social business creates "social benefit" by "giving full or majority ownership to the poor" (Yunus 2007b, p.11, 14). Both of the social enterprises in Yunus' model are financially self-sustainable and competitive organisations with social objectives and, importantly, no personal profit distribution, unless it is conducive with the social aims of the organisation. This two-

pronged definition of social enterprise, according to Yunus (2007b, p.11), not only solves a greater variety of social and economic problems, but enables a "radical" change in our conception of capitalism, as explored below.

2.4.2 Yunus' claims – his social business philosophy

Muhammad Yunus is one of only a handful of social entrepreneurs who clearly articulates his philosophy on why social enterprise is an essential addition to our global economic system. His goals are certainly far more ambitious than most, and his criticism of modern capitalism goes beyond its inability to address market failures, or even 'social' market failures. As we will now explore, Yunus sees the potential for social business to not only change the landscape of modern capitalism, but to "end poverty" itself (Yunus 2007a, pp.xiv, 231).

Yunus' (2007a) book, *Creating a World Without Poverty: Social Business and the Future of Capitalism*, begins with his critique of the global and national inequalities, particularly income inequalities, which proliferate in the world today. The question he poses, and attempts to answer, is why the free market has not solved these problems, and has instead, contrarily, often made them worse.

> In a world where the ideology of free enterprise has no real challenger, why have free markets failed so many people? … The reason is simple. Unfettered markets in their current form are not meant to solve social problems and instead may actually exacerbate poverty, disease, pollution, corruption, crime, and inequality. (Yunus 2007a, p.5)

Yunus argues that the global capitalist system is currently inadequate, due to the inability of businesses to provide for poor people's material needs, and the contribution of business in the damaging of vulnerable communities and the environment. The primary focus of Yunus' analysis, as we will see below, is heavily focused on solving the first of these criticisms. Who, he asks, is best placed to address the needs of poor people and alleviate global poverty?

In establishing his argument, Yunus first dismisses the ability of government, traditional nonprofit organisations and international institutions to address the needs of people who are neglected by the capitalist market. While Yunus does not consider nonprofit organisations to be redundant, he believes they are nonetheless inherently restricted by their reliance on the 'charity dollar', as "there is a built-in ceiling to the reach and effectiveness of nonprofit organisations" (Yunus 2007a, p.10). "Governments" and "multilateral institutions", alternatively, are not effective or efficient in addressing long-standing poverty and inequalities, as they are "bureaucratic, conservative, slow-moving, and often self-serving" (Yunus 2007a, p.11). The solution, according to Yunus, is to introduce a new form of organisation, the social business, which is uniquely able to deliver the goods and services that people in developing countries need in order to lift themselves out of poverty. Yunus sees social business as both the method and the form of the solution, with his focus on the entrepreneurial ability of the poor to create their own 'mini' social business (micro-enterprise) solutions. "Most important, the new social business arena will allow the poor themselves to express their enormous gifts for entrepreneurship, creating newfound abundance not only for themselves and their families but for the communities in which they live" (Yunus 2007a, p.185).

Unlike more conservative interpretations of social enterprise, Yunus does not believe that social businesses are simply a way of addressing market failures, which can be dispensed with once the normal market manages to establish itself in these difficult areas. Instead, he describes social enterprise as an essential, permanent extension or "improvement" of the free market model (Yunus 2007a, p.21).

> I think things are going wrong not because of "market failures". The problem is much deeper than that. Mainstream free-market theory suffers from a "conceptualization failure", a failure to capture the essence of what it is to be human. (Yunus 2006)

As explored in chapter one, Yunus' approach deliberately challenges one of the basic tenets of capitalism, that people are inherently self-interested "one-dimensional" individuals (Yunus 2007a, p.18). By simply allowing entrepreneurs to express their desires to help others and adding a 'social' dimension to our conception of 'business'

(that is, by creating social enterprises), many of the world's problems can apparently be solved. "Social business is the missing piece of the capitalist system. Introduction of it into the system may save the system by empowering it to address the overwhelming global concerns that now remain outside of mainstream business thinking" (Yunus 2007a, p.101). Yunus, more explicitly than most other social entrepreneurs and other social enterprise advocates, sees social enterprise as a challenge to the theoretical precepts of liberal capitalism. "Modern capitalism", he argues, must adjust to allow for the rise of social business: a "radically" different form of business which re-elevates social concerns, and, in doing so, can provide the solution to problems that 'self-interested' capitalism has failed to deliver (Yunus 2007a, p.3; Yunus 2007b, p.11).

According to Yunus (2006), the addition of social business is a relatively non-confrontational way to transform the capitalist system. In a similar vein to the Fabian tradition (see Lee and Raban 1988), Yunus believes that the addition of social enterprise can change the global capitalist system gradually over time, rather than through revolution or rapid dismantling of the current market. By doing so, global poverty can be solved; with social businesses to provide for poor people's needs, and "government regulations on both a national and international level" to ensure that traditional businesses do no harm (Yunus 2007a, p.218).[25] Interestingly, his requirement for government intervention highlights how Yunus' solution to the inadequacies of modern capitalism includes advocating for a more regulated market. This helps to highlight how Yunus sees his solution to development as distinctly different to the neoliberal prescription (which advocates for an 'unfettered' market, with minimal government involvement).

Yunus (2007a, p.5) is not overly clear, however, on how this greater regulation by governments or international bodies (which is to provide "proper oversight and guidelines" for MNCs) will come about. Despite claiming that social business can "end poverty", there is little in Yunus' writing about how social business can play a role in

[25] Unlike other proponents of social enterprise, Yunus dismisses the ability of voluntary CSR to reform the business sector, as they are still legally obliged to put profit-making before social good. In order to avoid such legal impediments for social enterprises, Yunus (2007a, p.245) supports calls for a 'social stock exchange', where social businesses are legally obliged (and rewarded) for pursuing double bottom-lines.

ensuring that governments do "regulate" the businesses which are found to "exacerbate" poverty and other social ills. Nor does he critically explore how social business can ensure that "self-serving" governments are themselves accountable to the people; which, it can be argued, is essential for a sustainable solution to poverty and inequality. For example, Yunus (2007a, pp.187-202) mentions the ability of social business to deliver new Information Technologies (IT) to enable poor citizens to better hold their governments to account, but is overly vague on how they might accomplish this. That is, it can be argued that, similarly to other social entrepreneurial proponents of social enterprise, Yunus is focused on the economic dimension of development, without sufficient regard to the political.

The narrative of global development that Yunus (2007a) builds in his writings is formed around the friction between two key players: the business sector, which is dominated by profit-seeking transnational companies; and the vast majority of people in developing countries, who are locked into poverty due to the neglect and exploitation of the business sector. The involvement of government and the power relations between other actors (including with the social enterprise itself) are glossed over, as an economic lens appears to set a narrow focus on his conceptions of development and poverty alleviation. Yunus' emphasis on empowering people to better their own situation, for example, appears to equate 'empowerment' with 'individual entrepreneurship', rather than any political conception of the term. Indeed, one of Yunus' fundamental premises appears to be that individuals are the best judges of how to improve their own lives: from the best way to create mini-enterprises from microloans, to the best ways to engage in any political action to ensure government accountability. While this focus on 'poor people' as 'knowledgeable agents' is refreshing, it still fails to acknowledge the power relations which can impede or manipulate such aims. As we will now explore, a political analysis of social business can help to reveal where and why problems arise in their implementation, as has been well documented in the case of microfinance.

2.4.3 Yunus' critics – criticisms of microfinance

While Yunus' most well-known social business, Grameen Bank, has received much international acclaim and been replicated across the globe (see www.grameentrust.org), there have been a number of criticisms raised in various quarters. These criticisms, invariably, have focused on Yunus' microfinance organisation rather than on his concept of social business more generally (Chowdhury 2011). They do, however, raise important concerns which need to be addressed within the broader social enterprise field. Some criticisms of microfinance focus on the economics of the situation, questioning microfinance's ability to provide financial benefits for customers, with reports of increased household indebtedness and a saturation of mini-enterprises in the market place (Bateman and Chang 2009, p.10; Moxham 2005, p.522). The analyses which are most critical (and pertinent to this thesis), however, concern the political dimension of Yunus' poverty alleviation strategy. Below, we will briefly explore some of these criticisms, focusing on the relationships between microfinance organisations, their customers, and their international supporters.

In the rural areas of many developing countries such as Bangladesh, income-generating activities are often embedded in traditional elite-poor power relations (Makita 2009, p.53). Microfinance organisations are then affected by, and affecting, the complex relations between informal markets and the local power structures that exist in rural communities. More powerful development organisations, such as Grameen Bank and BRAC[26] in Bangladesh, have effectively replaced some level of elite patronage (Devine 2003, p.235). While this can be seen as a positive, for example in eliminating more predatory money-lending patterns (Yunus 2007a, p.114), the replacement of elite patronage with microfinance organisation patronage does not necessarily lead to poverty alleviation, empowerment or social structure change.

For example, while Yunus (2007a, pp.26-27) argues that competition among microfinance organisations will increase efficiency and improve services to the poor,

[26] BRAC ('Bangladesh Rural Advancement Committee').

others have questioned whether this leads, instead, to division and fragmentation of poor people, as microfinance organisations compete for 'clients' (Ahmed *et al.* 2010, p.22; Edwards 2008b, pp.29, 60-61; Haque 2002, p.428). Rather than emphasising the need to collectively protest against embedded inequalities, microfinance organisations encourage rural poor people (mainly women) to take an individual-based (and small group-based) approach to poverty alleviation. As stated by Bunting (2011), many microfinance solutions "sidestepped the structural economic and political causes for people's poverty in the first place, putting all the emphasis on individual effort and resourcefulness to break out – an impossible expectation that has led to much further suffering".

Joseph Devine (2003, p.237), among others, has questioned whether this new form of 'patronage' is necessarily an improvement for local people if the microfinance organisation becomes less concerned with community welfare, and more concerned with creating a profit or revenue. With increasing pressure to become financially self-sustainable, many microfinance organisations are reportedly focusing on their banking activities at the expensive of their social programs and objectives (see Bunting 2011). Rahman (1999), for example, argues that as Grameen Bank has become more motivated to maintain its high repayment rates, its focus on poverty alleviation measures and the empowerment of local women has declined.

The female empowerment that microfinance promotes has also itself been questioned. Karim (2008, p.6) has raised concerns about the potential for microfinance to produce "economies of shame" rather than economies that empower. Microfinance group formation, she argues, uses social patriarchal norms to ensure that women feel socially compelled to 'honour' the loan repayments. Feminist analysts question the ability of microfinance to create change in the underlying patriarchal norms, when its 'success' appears to be founded on women's restricted social position, and, especially, when the aim to empower women, through their ownership of micro-enterprises, does not occur (see Mayoux 2000 for a review). A study by Goetz and Sen Gupta (1996, p.49) of microcredit in Bangladesh, for example, found that 63% of women had 'partial' to 'no' control of their loans (with control going to husbands or male

relatives). Furthermore, they found that when women did control their loans, these were generally for small amounts to conduct traditional 'women's work' (Goetz and Sen Gupta 1996, p.51). These home-based jobs, argue Hunt and Kasynathan (2001, p.45), do not challenge the traditional gender roles, and thus microfinance cannot be assumed to empower women.

Apart from these local power relations and norms, microfinance also has a complex relationship with the development discourses and priorities of international donors and supporters. In countries such as the UK and US, local actors such as governments, philanthropists and public fundraising groups, support most social welfare activities; whereas it is foreign actors, such as INGOs, philanthropists, governments and aid banks, which often dominate funding in developing countries (SustainAbility 2003, p.12,18). Consequently, the power relations between foreign donors (or creditors) and social enterprises become of greater significance, particularly in aid-dependent, postcolonial countries like Bangladesh (Karim 2008, p.6; Nuruzzaman 2004).

One of the attributes of a social enterprise like microfinance is its supposed financial independence from government and donors, but this is often an aspiration rather than a working reality. The consequence of this is that many microfinance organisations are still reliant on funders or supporters, especially during the initial stages of operation. While some more established microfinance organisations, such as Grameen Bank, have become less reliant on external funders and thus more independent, the 'cost' of becoming financially independent may be 'paid' in the loss of focus on social objectives, as explored above. The majority of microfinance organisations in Bangladesh, unlike Grameen Bank, are not financially independent. According to Devine (2003, p.231) they are under constant pressure from western donors and creditors to become so.

In this environment, the debate raised in section 2.3.2, over whether social enterprise is being used for welfare-shirking by national governments, is as pertinent a concern as whether foreign donors and creditors are using microfinance to further their own

agendas in developing countries.[27] Heloise Weber (2004b), among others (Bateman and Change 2009, p.23; Rankin 2002, pp.11-13), argue that the World Bank's encouragement of microcredit in development around the world is part of its own neoliberal restructuring program. It is seen as a medium for smoother market reform; an effective pacifier for the rollback of government subsidies, welfare and international aid funding. In Bangladesh, microfinance enables actors such as the World Bank to establish market-based development at a grassroots level. Microfinance's focus on individual entrepreneurship, income-generating micro-enterprises and the provision of credit, are all compatible with the neoliberal development ideology (Bateman and Chang 2009, p.23).

A focus on neoliberal-compatible economic goals by microfinance organisations, including their own financial self-sufficiency, has in some cases led to a shift away from the organisation's social goals, and towards increased focus on the repayment of loans and targeting of wealthier customers. "[T]he microfinance industry under the influence of the current hegemonic ideological order of neo-liberalism is tilting towards the right and is increasingly coming under the danger of a mission-drift as well as client drift" (Dash 2009, p.83). For those in microfinance who aim to challenge the capitalist market system, such as Yunus, the possibility of microfinance being compromised by neoliberal actors is particularly problematic.

2.5 Complicity or resistance?

While the criticisms listed above cast a negative light on microfinance as a development initiative, there is often also an underlying assumption that the microfinance organisations are inherently complicit in any reports of exploitation and/or implementation of a neoliberal agenda. This assumption does not allow for the fact that microfinance is implemented by a diverse set of actors, with multiple motives.

[27] A similar argument can be made for Bottom of the Pyramid (BoP) poverty alleviation strategies, with MNCs accused of using BoP as a "marketing ploy" with little real concern for the "systemic causes of poverty and marginalisation" (see Dolan 2012, p.3).

Within the broader microfinance 'community' there are certainly those who act to maximise profit at the expense of the poor, and those who readily conform to the neoliberal model, but there are also microfinance actors who attempt to enact various levels of 'everyday resistance' to the current revenue-focused trajectory.[28] As argued by Townsend *et al.* (2004, pp.872-873), "independent thinking" or "alternative" development organisations may be less visible than the more "compliant NGOs", but nonetheless do still contribute to the creation of "spaces of resistance" within the development arena.[29]

Many of the most condemning criticisms, recently, have focused on the 'new wave' of privately-owned, commercialised microfinance organisations. 'Compartamosbanco', for example, has been censured for its predatory interest rates and exploitation of its poor members in Mexico (Bateman and Chang 2009, pp.11, 22). Cases such as this, however, should not be conflated to represent microfinance actors as a whole. Yunus (2007a, p.33), for example, directly warns against private ownership and personal profit in microfinance, believing that financial goals would inevitably dominate over any social goals.[30] In response to international support for these profit-oriented microfinance organisations, "Yunus' voice has stood in lonely protest against the current pernicious trend towards the financialisation of microcredit" (Conroy 2011, June 14).

[28] While the use of the term 'everyday resistance' in this thesis takes its roots from Scott's (1987) description of resistance by local people (such as rural 'peasants'), it deviates from his definition by focusing not on micro-level actors, but on meso-level (social enterprise and NGO) actors. This distinction is significant, as many meso-level development organisations have a complex, dependent relationship with their neoliberal donors (see section 2.4.3), which greatly influences their motivation and ability to enact instances of 'resistance'. For more literature on the 'everyday resistance' of NGOs see Mosse (2004), O'Reilly (2010), Routledge (2003) and Townsend *et al.* (2004). Furthermore, this thesis will use the term 'everyday resistance' to imply resistance to not only neoliberalism (as is the most common usage in the literature above) but resistance to state/government and local powers as well. This more expansive conception of resistance enables the thesis (specifically, in chapter eight) to engage in a more comprehensive and multifaceted analysis of social enterprise and its potential role in society.

[29] Townsend *et al.* (2004) use the terms "compliant" and "independent thinking" NGOs to distinguish between those which adhere to neoliberal norms and those which seek to resist them. As noted by the authors, between these two extremes there exists a wide variety, or spectrum, of development organisations which use varying degrees of resistance and compliance in their attempts to accomplish their development aims.

[30] In Yunus' philosophy, the activities of predatory microfinance institutions would be better described as a set of exploitative businesses, the type which require better government regulation (see section 2.4.2).

While this example does not negate many of the criticisms listed above, it reminds us that these actors are agents in their own right, who can resist, as well as comply with (or take advantage of) the environment in which they operate.[31] This 'environment', however, is inherently political; with local norms and international development agendas, as revealed in the criticisms above, often having pervasive influence. For microfinance actors like Yunus, then, awareness of these *political* dimensions is essential for any attempt to challenge the status quo. This is similarly true for those social enterprises operating in western welfare countries, as explored earlier. Unless the social enterprise field begins to step outside the economic discourse, however, a political perspective will remain elusive; which may, unintentionally, undermine the social goals that these social entrepreneurs intend to create.

Ridley-Duff and Bull (2011, p.103) distinguish between two types of social enterprise actors operating throughout the world: those who appear to "accept [free market capitalist] globalisation and use it to advance social entrepreneurial enterprises"; and those who "seek to subvert the logic of the free market, and change relationships between money, land and people". This difference is often between those who see social enterprise as an efficient solution to a temporary market failure within the current capitalist system, and those who describe social enterprise as a permanent solution which will challenge the status quo of business thinking. As advocated by 'The Skoll Centre for Social Entrepreneurship', social enterprise is "not a current within advanced capitalism but a challenge to it" (cited in Edwards 2008, p.18). It is this position, however, which is most likely to ruffle feathers and be contested, within and without state borders. An infusion of political discourse into the social enterprise literature will not change this, but it may help to equip more social entrepreneurs with the political concepts they need to better assess their position, and their choices, within the broader political landscape.

[31] See the discussion in section 8.4.2 for more on the form of 'resistance' employed by the thesis' social enterprise case study.

2.6 Conclusion

One of the driving motivations for various social enterprise supporters is dissatisfaction with the current capitalist system. As explored earlier, Yunus prefaces his argument for social enterprise with the failure of the free market to solve global poverty and distribute wealth more equally. Emerson (2005, p.2), also, advocates for a change to the capitalist system, as "it is hard to escape the growing sense that as we move through the early years of this new century, the industrial capitalism of the past is increasingly found to be wanting". Indeed, recent events such as the Global Financial Crisis appear to have generated more support for social enterprise (Harding 2009, April 24), as "social enterprises offer either a partial or a complete rejection of established 'rules' of international capitalism" (Ridley-Duff and Bull 2011, p.100). While there is diversity in the specific envisioning of how social enterprise will change or challenge the capitalist system, the commonality across these actors is a sense that, similarly to Polanyi's argument, the economy and society have been unduly separated, to the detriment of human wellbeing, and marginalised people in particular. Indeed, Tsai and Kao (2008) enquire as to whether these social enterprise actors are attempting to contribute to a Polanyian-like countermovement against the contemporary free market capitalist system.

As noted earlier, however, business-oriented academics and practitioners have had a dominant presence in social entrepreneurship and social enterprise. This has led to the economic perspective having most purchase on the fields, with a social enterprise's 'success' often measured via its ability to solve entrenched market failures, rather than its ability to challenge economic structures. With the current market focus of the field, then, social enterprises are more likely to contribute to the commodification of social processes than provide an alternative or countermovement to capitalism.[32] Furthermore, it could be argued that the field's focus on economic theory, without sufficient regard for political processes, has left many social enterprises open to

[32] That is, as Polanyi was against the commodification of society, social enterprise (as envisioned by the majority of actors in the literature) would not fulfil the Polanyian criteria for a countermovement against capitalism. This does not mean, though, that a market-compatible social enterprise is not still capable of contributing to other forms of countermovement against neoliberal capitalism (see Yunus 2007a, p.215).

external influence. One of the consequences of this, it can be conjectured from the analyses above, is that the social enterprise concept has apparently been somewhat co-opted by western governments that are interested in the continuation of the New Public Management goal of smaller government, and by international institutions that are interested in the advancement of neoliberal development.

Despite these criticisms, however, it would be premature to thus dismiss or disregard all attempts at social enterprise. Within the field's diverse range of activities, myriad social enterprise experiments are being conducted on the possible ways of creating more socially focused or embedded economies. Importantly, as Gibson-Graham (2008, p.618) argue, an open mind is needed, as "experimental forays into building new economies", such as social enterprise, are often "dismissed as capitalism in another guise or as always already co-opted" and "judged as inadequate before they are explored in all their complexity and incoherence". While some social enterprises may be diverted from their original intent of melding social intent into economic interactions, these actors still have agency and are able to enact various forms of 'everyday' resistance, teaching us more about the influence of hegemony and the difficulties and potentials for creating change. Exploration of these facets of social enterprise, however, is lacking in the current literature. This is especially true for the multitude of formal and informal social enterprises that exist in developing countries, beyond microfinance (Minard 2009, p.187).

In order to address this gap in the literature, then, the thesis will attempt to add to the social enterprise field through an in-depth examination of the local and national socio-political factors and the global political economic influences affecting Yunus' energy-focused social enterprise, Grameen Shakti. The following chapter will help to 'set the scene' by delving into the literature concerning 'energy' in international development and in Bangladesh. This will contribute to a broader understanding of the economic and political contexts in which Grameen Shakti exists, and what role the social enterprise could play.

Chapter 3- Energy Development:

Theories and realities in Bangladesh

3.1 Introduction

Before we can delve into an examination of an energy-focused social enterprise, Grameen Shakti from Bangladesh, we need to critically explore the various contested interpretations of 'energy development' in the literature. As noted in chapter one, the concept of 'development' is politically infused. Energy development, with its strong connection to national economic growth and issues of sustainability, is a particularly contentious component of development. It has been most simply defined in the literature as the "increased availability and use of energy services" (Toman and Jemelkova 2003, p.93). Debates over the role and benefits of energy in development, however, go deeper than energy supply and demand; they involve power struggles over national priorities, energy paradigms and development discourses.

Of most significance to this thesis is the difference between the dominant neoliberal conception of energy development and those which seek to provide an alternative or contrasting energy discourse and focus. In the following review of energy development, three energy paradigms will come to the fore, providing a basis for analysis of how power relations and international norms influence energy development foci. Specifically, examination of how alternative energy paradigms are resistant to, and mainstreamed by, the dominant energy ideology will prove essential for this chapter's examination of the Bangladeshi energy sector, and for our analysis of Grameen Shakti's response in the chapters to come.

Following an unpacking of the energy development literature, then, the chapter will explore the activities of the main actors in Bangladesh's energy sector. Doing so will reveal interesting insights into the priorities and theoretical constructs employed by those in power. Analysis of the Bangladeshi energy sector will not only highlight which

energy paradigms and priorities dominate the arena, but also what areas of energy development, and whose energy needs, are being most neglected. Further examination of the political dimensions of these 'peripheral' energy issues will set out the challenges for a social enterprise, like Grameen Shakti, in developing a more comprehensive approach to energy development in rural Bangladesh.

3.2 Energy Development Paradigms

For developing countries, energy is often considered a prerequisite for development, as "the existing literature on energy and development does show that energy development is an important component of broader development" (Toman and Jemelkova 2003, p.110). Whether energy is *sufficient* for development, however, is hotly contested in the literature (Dutta 2003, p.17; Toman and Jemelkova 2003, p.110; Wamukonya 2002, p.6). Many authors and actors have touted the role of energy in a developing country's economic growth (Barnes and Floor 1996, p.497; Birol 2007, p.2; Saghir 2006); while others have focused more on energy's role in improving social welfare and quality of life (Cecelski 2000; Practical Action 2009; UNDP 2005). As noted above and highlighted below, however, an author or actor's position on the debates over the role and benefits of energy in development (and indeed, which debates are even engaged in) are closely linked to their theoretical and methodological perspective and how this contrasts to, or agrees with, the dominant energy development paradigm.

A review of the current literature on energy development reveals the emergence of three prominent themes, which can be labelled: energy security, energy sustainability, and energy poverty. Each of these energy paradigms concerns a different focus and scale, and each is based on energy concepts which are dynamic and contested. Categorisation of energy development into these three paradigms is helpful in distinguishing different trends, priorities and ideological stances in the literature. A review of these disparate approaches to energy development will also prove useful in

determining which approaches to energy development are most prevalent, and which are most neglected, in the Bangladeshi energy sector.

3.2.1 Energy security paradigm

Historically, national and international energy priorities for developing countries have reflected the dominant development ideology of the time. The vast majority of energy policies, funding and research over the past decades for example, have focused on the energy forms which best facilitate the modernisation and neoliberal aims of industrialisation and macro-economic development. Consequently, there has been "a predominance of attention to and investment in large-scale energy infrastructure" (Practical Action 2009, p.3) in order to provide for the energy consumption needs of the "commercial energy segment" (Sagar 2005, p.1367). While variations on this theme have surfaced over the years, the focus on large-scale modernising energy for commercial urban and industrial actors has remained a constant. One of the consequences of this has been a continuing preference for expedient and cost effective fossil fuels; reliance on the oil, coal and gas MNCs who run these energy industries; and a focus on the ability of countries to secure these energy resources (Clancy *et al.* 2003, p.8; Mainhardi-Gibbs *et al.* 2010, p.2; Skutsch and Clancy 2006, p.70).

In recent years, global events have led to the re-emergence of the securitization discourse in international affairs. Consequently, the current literature concerning energy development has tended to focus on the concept of 'energy security' (for example in Birol 2007; Barton *et al.* 2004; Khatib 2000; Dupont and Pearman 2006; Islam 2009; Jain 2010; Saghir 2006).[33] Energy security broadly refers to a government's desire to secure energy for the current functioning and future needs of a country. Barton *et al.* (2004, p.5) define it as "a condition in which a nation and all, or most, of

[33] For many countries, such as the United States, energy security has had varying degrees of importance in national policymaking since the oil crises of the 1970s (Barton *et al*. 2004, p.4; Khatib 2000, p.112; Reddy 2000, p.41). And, according to Birol (2007, p.2): "Safeguarding energy supplies is once again at the top of the international policy agenda".

its citizens and businesses have access to sufficient energy resources at reasonable prices for the foreseeable future free from serious risk of major disruption of service".

In the literature concerning developing countries, energy security has been described in terms of: avoiding energy price shocks (Toman and Jemelkova 2003, p.107); making energy trade profitable (Saghir 2006); and, most prominently, ensuring that there is sufficient energy available for national economic growth (Islam 2009, p.128; Khatib 2000, p.112; Lall 2009, p.1). Apart from some attempts to use 'energy security' to focus on the energy needs of households (Jain 2010), the term is predominantly used in the literature to describe or prescribe energy development strategies at a national level. According to Jamal Saghir (2006), the former World Bank 'Director of Energy and Water', for example, this includes "attracting investments in the energy sector" and creating "the right policy and pricing frameworks" to achieve national "energy efficiency", "diversity" and "regional energy trade".

Thus, energy security, as the currently popular conception of energy development in the literature (Birol 2007, p.2), appears to maintain and further legitimise the energy development theme of large-scale energy production for macro-economic growth, as described above.[34] The consequences of this, for energy development in developing countries, is a continued focus on energy supply for urban and industrial centres rather than rural and urban slum areas (Barnes and Floor 1996, p.498), expedient fossil fuel use for energy supply rather than renewable, non-polluting energy production (Mainhardi-Gibbs *et al.* 2010, p.2), and centralised control of energy supply rather than decentralised energy ownership (UNDP 2004, p.35). That is, by prioritising the 'security' of energy supplies for activities which drive national macro-economic growth, the bulk of government and international investments are still focusing on and

[34] There is, of course, also a national security component to the concept of energy security. This is more prominent, however, for western countries such as the US, which are currently more heavily invested in the securitisation discourse (see note 25 above). For developing countries, energy security appears to be used to further legitimise the need for trade and foreign direct investment, by actors such as the World Bank (Saghir 2006), though it is also being used by some developing country governments to promote their desire to have nationally-owned energy supplies (Petrobangla 2009). In the section 3.3.1 there appears an interesting tension concerning the Government of Bangladesh's desire to create energy security by developing nationally-owned resources, while relying on foreign businesses and international aid in order to do so.

reinforcing the importance of large-scale business industrial actors, often at the expense of the energy needs of 'peripheral' activities, people and environmental concerns. It is these issues which have led to the establishment of alternative energy paradigms, ones which attempt to re-orientate energy development in a more environmentally and socially conscious direction, as we will now explore.

3.2.2 Energy sustainability paradigm

An alternative energy discourse, which has grown significantly in international awareness over the last decade, surrounds the concept of sustainability. The original environmental movements of the 1970s arose, in part, due to the environmental degradation (such as deforestation and air pollution) caused by an industrialising modernisation approach to development around the world. Initially, the sustainable energy discourse which was promoted by these environmental movements focused not only on the type of fuel used (*i.e.* non-renewable fuels), but also attempted to challenge the economic and political systems which supported conventional energy development and consumption (Bryne, Toly and Wang 2006, p.xi; Glover 2006). The original sustainable energy movement advocated for a fundamental shift in our understanding of energy in society: arguing against the energy production and ownership patterns which propagated global energy inequalities, to instead focus on an energy discourse which promoted a more socially and environmentally-conscious direction (Bryne and Toly 2006, pp. 2, 13).

As Climate Change has become more widely acknowledged, the global desire for a more environmentally-conscious approach to our current energy practices has gained traction. Sustainable energy, consequently, has recently become a more broadly used and defined concept, with the term 'sustainability' becoming increasingly integrated into the mainstream energy discourse (for example in UNDP 2000, p.3). We also see sustainability being used to describe the 'financial sustainability' of an energy project, or the 'economic sustainability' of an energy policy, rather than (or as well as) its environmental credentials (for example in Bennett *et al.* 1996, p.271; Reddy 2000, p.42; World Bank 2004a, p.iii). Bryne and Toly (2006, pp.18, 22) argue that much of this

recent literature on sustainability does not challenge the status quo of "energy capitalism" (also see Glover 2006). The construction of large-scale solar or wind power plants to feed electricity into the national grid (see ESMAP 2010), for example, can be seen to help continue, rather than challenge, the current over-consumption of energy in urban centres. That is, while some voices in the literature promote the rise of sustainability as a new direction in energy strategies, others have highlighted the manipulation of the term such that it is now integrated into, rather than contending against, the dominant energy practices (see also Lele 1991; Parayil 1998).

Despite the rising popularity of energy sustainability, however, it is still a sub-dominant paradigm in the broader energy development arena. According to a recent report by the NGO 'Oil Change', while the World Bank publicly highlights its renewable energy initiatives, its funding of energy development is still heavily dominated by fossil fuels (Mainhardt-Gibbs *et al.* 2010, p.2).[35] According to a World Bank (2004a, p.iii) report, investment in these "extractive industries" (*i.e*. oil, gas and mining) is justified, as it is considered essential for the national economic sustainability of developing countries.

The World Bank's position here helps to highlight the prioritisation of macro-economic growth in energy development and the continued commitment of major actors to secure this goal. And yet, despite this, there has been concerted international effort to elevate the status of renewable, non-polluting and more environmentally-conscious energy alternatives. While, as noted above, the sustainability discourse has been somewhat 'mainstreamed' and used to help continue the status quo of energy consumption, the energy sustainability paradigm is still powerful. It has sufficient international legitimacy, for example, to hold governments and international institutions to account (whether successfully or not) when they ignore environmental concerns (for example, in Mainhardt-Gibbs *et al.* 2010 and Redman 2008). It has also created community environmental norms and enabled the creation of an international Climate Change agenda (see Pettenger 2007). The energy sustainability paradigm,

[35] For example, the commercial arm of the World Bank quadrupled its funding of coal and other fossil fuels in developing countries from 2004 to 2008 (Redman 2008, p.1).

while sub-dominant (and arguably somewhat manipulated), nevertheless, does provide a discourse for those attempting to resist the 'energy security' status quo.

3.2.3 Energy poverty paradigm

3.2.3.1 The 'other' energy crisis

While the concept of energy poverty has been defined in the literature in a variety of ways, the commonality is a focus on 'energy for the poor' (Birol 2007; IEA 2010; Pereira *et al.* 2011; Reddy 2000; Sagar 2005). "Energy poverty can be defined as the lack of adequate modern energy for the basic needs of cooking, warmth and lighting, and essential energy services for schools, health centres and income generation" (Practical Action 2009, p.2). Solutions to energy poverty are closely linked to poverty alleviation and development more broadly, as it is often those without adequate energy for cooking, light and farming who also go without other life essentials (Sovacool and Dworkin 2012, p.17; UNDP 2005, p.1). This third energy paradigm, then, moves away from issues of national energy supply and sustainable production (as considered above), and instead focuses on a particular user group, namely, those without adequate or appropriate energy for their daily needs. This draws our attention, in particular then, to energy development in urban slums and rural regions of developing countries.

One of the most influential early movements to focus on the energy needs of the poor arose in reaction to the energy crisis of the 1970s. While the world was transfixed by the undermining of national energy security when oil prices sky rocketed in the 1970s, others were identifying and attempting to highlight the "other energy crisis" (Eckholm 1975; also see Arnold *et al.* 2003; Clancy *et al.* 2003, p.9; Greeley 1987, p.2; Howes 1987). As emphasised by Eckholm (1975): "For more than a third of the world's people, the real energy crisis is a daily scramble to find the wood they need to cook dinner" (cited in Arnold *et al.* 2003, p.3). Over the 1970s and 1980s, then, researchers such as Eckholm (1975) and Agarwal (1986, 1987) brought fuelwood shortages and the cooking energy needs of the urban and rural poor into the world's energy agenda.

Consequently, much work was done to measure and address the perceived increasing gap between fuelwood demand and supply (Arnold 2003, p.3), with popular solutions including reforestation programs and more efficient cooking technologies.

Interest in the 'fuelwood gap' energy crisis, however, waned over the 1990s. Various explanations for this have been proposed. Some argue that the 'gap' did not materialise to be as large as expected, while others argue that funders were discouraged when many projects surrounding reforestation and improved cooking technologies failed to take-off or produce the desired results (Arnold *et al.* 2003, pp.5-6; Greenley 1987, p.2). Agarwal (1987) argues that many of these fuelwood projects were unsuccessful due to the failure of implementers to understand the embedded socio-political difficulties which surround land use and fuelwood in developing countries. That is, while sufficient and sustainable fuelwood supply for the cooking needs of poorer people still remained a primary energy need, solutions to these problems were not easy to implement or up-scale, and thus lost their appeal for international funders and governments.

3.2.3.2 Rural electrification

In recent years, the focus on energy poverty appears to be re-emerging, as the link between energy and the 'Millennium Development Goals' is highlighted by various authors and institutions (IEA 2010; O'Brien *et al.* 2007; Practical Action 2009; UNDP 2005). This time, however, there appears to be less focus on cooking needs and the fuelwood gap, and more of a focus on moving poor people up the 'energy ladder' to more modern technology (for example in Barnes and Floor 1996, p.500; O'Brien *et al.* 2007, p.607; Reddy 2000, p.45; Saghir 2006). The "classic" energy ladder, presented in figure 3.1, places different fuels or sources of energy on consequential ladder rungs, with electricity, the most modern and 'desirable' fuel, at the top (Duflo *et al.* 2008, p.8). This linear energy fuel ladder provides, then, the rationale for the currently dominant solution to energy poverty in the rural development literature, namely 'rural electrification'.

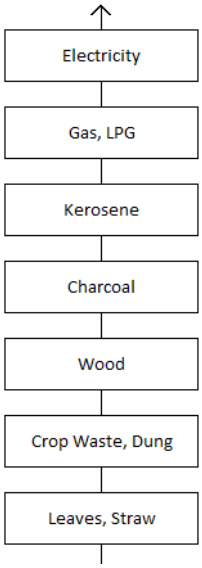

Figure 3.1: The 'classic' energy ladder (adapted from Duflo *et al.* 2008, p.8)

According to Green (2005, p. 269), "in many less developed countries, rural electrification is consistently championed as the answer to many development policy challenges such as poverty alleviation, urban migration, economic development and even national security concerns". In practical terms, connection of rural homes and businesses to the national electricity grid is relatively easy to measure and quantify, and is compatible with a centralised government policy framework (Bahaj 2009, p.2142; Pereira *et al.* 2011). Primarily though, electrification of rural areas is considered essential for increased rural economic development (Barnes *et al.* 2010, p.30): Access to electricity can help integrate poor rural families into the modern world, with better communication (*e.g.* with mobile phone recharging), income-generating opportunities (*e.g.* with electric lighting and agricultural machinery), and thus more connection with (and creation of) a formal rural market place.

Extension of the national grid into rural areas is the dominant approach to rural electrification in developing countries; however, it is often physically and financially difficult to extend transmission lines into more remote regions. One solution, which has become popular recently, is the adoption of solar, wind and mini-hydro energy technologies to supplement the existing systems (BEN 2006, p.28). That is, in the last few decades, rural electrification has taken on a new 'sustainability' dimension. As renewable energy technologies have become more affordable and accessible, actors

such as the World Bank have been encouraging these options to aid in rural electrification (Barnes and Floor 1996, pp.509-510; Martinot 2001, p.691). Despite the apparent universal appeal of these energy poverty solutions, however, there have been concerns raised about the narrow focus of the electrification approach, as we will now explore.[36]

3.2.3.3 Challenging rural electrification

A number of researchers have argued that the prioritization of electricity, in rural energy policy and projects, is potentially problematic (Dutta 2003, p.14; Green 2005, p.269; Karekezi and Kithyoma 2002, p.1083; Pachauri and Spreng 2003, p.6; Wamukonya 2002, p.5). A common theme in these studies is a criticism of the assumption, inherent in most rural electrification projects, that development is most assured by helping the poor 'leap frog' to the top of the energy ladder. Contrastingly, it is argued that people living in poor rural areas are best served with a more diversified and multi-stage approach, with a focus on improving the use of and access to both modern and traditional fuel sources. Interestingly, the need for more diversified energy projects is acknowledged by most development agencies, including some World Bank reports (Asaduzzaman *et al.* 2009, p.xxii; World Bank 2010, p.xi). The issue, however, is that this does not often lead to increased funding, investment or research in non-electric energy alternatives.

Karekezi and Kithyoma (2002) and Wamukonya (2007) have argued, for example, that solar electricity is being prioritised in Africa despite it not being the most needed and suitable energy form. Wamukonya (2002, 2007) expands on this to explore how rural electrification projects often exclude the poorest, who can least afford electric options. In India, analysis by Dutta (2003) has shown that the preference for rural electrification is suboptimal for women and other marginalised energy users. According to all three studies, while improvement to traditional biomass cooking was found to be the most

[36] The concept of the energy ladder, and criticisms against it, have existed for several decades. Interestingly, it could be hypothesised that the recent popularity of this approach is in part due to its compatibility with the new 'energy sustainability' aims of international funders (*i.e*. promoting solar-powered electricity). This sustainability dimension, however, does not address some of the basic criticisms of the rural electrification approach, as we will see below.

needed energy project, it was relatively neglected in these regions, as a focus on electrification had led to a lack of investment in non-electric rural energy projects. As noted by Practical Action (2009, p.6): “Over-emphasis on the provision of solar PV [photo-voltaics], driven by international multilateral corporations, has meant that other viable and cost-effective technologies – such as small scale wind, micro hydro and biomass, which can be locally developed and manufactured – are hugely neglected and seem to ‘fail’ because there are limited resources available for their development beyond the pilot phase”.

Karekezi and Kithyoma (2002, p.1082) highlight modernisation assumptions by some western actors as reason for the promotion of electricity: “One of the key drivers to the interest in disseminating PV technology in sub-Saharan Africa is the preoccupation with electricity. … Since most of the experts come from countries with almost universal electricity access, the thought of any form of development without electricity is perceived as unthinkable”. For others though, there is a connection between rural electrification and market-based development objectives. According to Wamukonya (2007, pp.6-9), some of the key drivers of solar-electric investment were poverty alleviation, cost-effectiveness, and creating and maintaining a market for the solar industry. Jacobson (2007, p.146), more explicitly, argues that solar projects in Africa are motivated by underlying neoliberal assumptions about poverty and energy markets: “solar PV in Kenya are more closely associated with the neo-liberal idea that poverty alleviation is best achieved through the integration of poor people into world economic markets”.

Thus, while rural electrification does deviate from the dominant energy security priorities of macro-economic growth in urban and industrial areas, it is still appears to support a development agenda which prioritises modern, market-based economic development. Interestingly then, it could be argued that the shift in attention from the ‘fuelwood gap’ to ‘rural electrification’ in the energy poverty literature over the past decades is indicative of how an originally alternative energy paradigm has been re-directed to better comply with neoliberal development objectives. That is, similarly to

energy sustainability, the energy poverty paradigm appears to have been 'mainstreamed' or moulded into a more suitable development discourse.

This does not necessarily mean, however, that all actors are, consequently, supportive of a linear energy ladder approach. As we have explored above, rural electrification is already contested in some parts of the energy poverty literature. Furthermore, practitioners have continued to experiment with other interpretations of energy development for the rural and urban poor (see Pereira *et al.* 2011; Pachauri and Spreng 2003). A more recently popularised approach to energy poverty called 'energy services', for example, looks less at how to achieve maximum electrification and more at what end-use the energy is expected to serve. "What this [energy services approach] implies is that far more consideration would be given to what people need energy *for*, and identification of the constraints or conditions around these end uses [italics in original]" (Clancy *et al.* 2003, p.10). For example, 'energy services' focuses on lighting rather than solar panels, and cooking rather than fuelwood (Pachauri and Spreng 2003, p.3; UNDP 2005). Importantly, as opposed to the assumptions in the rural electrification approach, 'energy services' has the potential to maintain the focus of energy policies and projects on the needs of a community, rather than on technocratic solutions (Toman and Jemelkova 2003, p.105).[37]

In the last decade, influential actors such as the United Nations (UNDP 2005) have helped to popularise alternative energy approaches. However, in terms of practical funding dollars and studies in the literature, rural electrification still appears to be the dominant strategy for energy poverty alleviation in developing countries. It is important to remember though, that for those who are interested in drawing more attention to the energy situation of rural people (as opposed to energy for large-scale urban industry), the rising profile and investment in rural (especially solar) electricity is not necessarily a negative development. And for those who wish to challenge the current 'electrification' status quo, alternative approaches such as 'energy services' can provide an avenue for dissent or re-direction.

[37] It is important to emphasise that it is not electrification of rural areas which is problematic, but the assumption by policy makers and funders that electrification should be the sole energy priority and/or an end-goal in itself.

3.2.4 Dominant energy ideologies and the 'resistance' of alternative paradigms

The three energy paradigms, explored above, present some of the different perspectives currently employed in the energy development literature. It was argued that the energy security paradigm currently directs decisions by governments and international institutions. This focus on national macro-economic energy security has maintained and legitimised the neglect of those energy needs and forms which are considered peripheral; namely, rural, decentralised, renewable, poor and/or traditional energy use and users (Mainhardi-Gibbs *et al.* 2010, p.2; Sagar 2005, p.1367). The energy sustainability and energy poverty paradigms, in response, do appear to consider energy needs which fall outside the conventional energy parameters. However, while these energy paradigms may move away from the foci of the conventional energy paradigm, they are not unaffected by dominant development ideologies.

In the section above, we saw how energy sustainability has been somewhat 'mainstreamed', to better suit the energy consumption status quo; and how the energy poverty approach has shifted from traditional energy needs in the 'fuelwood crisis' to focus more on modern, market-based energy forms with 'rural electrification'. Simultaneously, however, both the sustainability and energy poverty discourses have been fundamental in challenging and directing conventional energy norms. While energy for macro-economic growth has remained a constant historical priority, energy alternatives such as 'renewable energy' and 'energy for the poor' have helped to mould, and in turn been moulded by, the dominant energy paradigm. This is a theme that we will return to later in the chapter.

In the following examination of the energy sector in Bangladesh, the energy paradigms presented above will help us to probe which energy development ideologies underlie the choices of key actors. Primarily, the analysis above will help to explain how these actors' choices, concerning energy policy, research and projects, are critically entwined with their own conception of development and the current norms concerning what

forms of energy should be prioritised. This will prove essential, in later chapters, in building our understanding of what energy development paradigms Grameen Shakti will be negotiating with while operating in the Bangladeshi energy sector.

3.3 Bangladesh: Actors in the energy sector

The dominant issue on the energy agenda in Bangladesh over the last decade has been the unreliability and shortage of grid electricity. This "energy crisis" has been the primary focus of government policy, media reporting and international actors (Hashim 2012, April 24; Islam *et al.* 2008, p.299; Khan 2010, April 10). The situation has become dire in the more recent years with the available grid electricity output unable to meet peak demand, causing frequent black-outs and scheduled load-shedding across Dhaka and beyond (Chowdhury *et al.* 2012, p.280; Cookson 2010, April 14; Habib 2009, March 10). The majority of government and international investments have focused on solving this aspect of Bangladesh's energy crisis; that is, on electricity failures in urban and industrial areas (Ali 2002, p.15).

Consequently, the main debates surrounding energy development in Bangladesh focus on questions of what is the best method of producing sufficient electricity for the national grid. As we will see over the section below, while concern for rural communities, environmental impact and sustainability do enter into the debate, it is large-scale grid electricity for commercial actors which remains the primary focus. That is, as we will now explore, priorities in Bangladesh's energy sector appear to follow the dominant international energy development trends outlined in the section above.

In the following, we will review the activities of the three major actors (or groups of actors) in the energy sector: the Government of Bangladesh, foreign businesses, and international financial institutions. While these are not the only actors involved, they are the most influential over investments in the energy sector presently, and thus can provide most insight into the energy development ideologies which dominate in

Bangladesh. Firstly, then, let us explore how the Government of Bangladesh is involved in energy development in Bangladesh.

3.3.1 The Government of Bangladesh

Since the 1960s and 1970s, the natural gas sector has been the most prominent feature in the Government of Bangladesh's national energy policies (Islam *et al.* 2008, p.303). The Bangladesh gas sector was born and grew to dominate the national energy agenda partly as a result of rising international oil prices and a desire to have a nationally owned energy source for "energy security" (Petrobangla 2009, p.8). "Considering the importance of electricity in boosting national economy and the prospect of distributing the benefit of indigenous natural gas to different parts of the country through a national electricity grid, Government has given priority in maximizing the use of natural gas for power generation" (GoB 2004, p.16). The gas sector is also considered essential for production of CNG (compressed natural gas) for transportation. According to the state-owned 'Bangladesh Oil, Gas and Mineral Corporation', Petrobangla (2009, p.8), gas sources contribute over 70% of the commercial energy in Bangladesh.

Despite its importance in meeting Bangladesh's future energy requirements, the Bangladeshi gas sector has been regularly plagued by issues of mismanagement and under-supply. The Government's record in the gas sector, for example, has been tainted by controversies, with industrial accidents, corruption and inefficiencies. Gas "blowouts" have occurred at gas extraction sights in Tengratila, Chatak, Sylhet and Magurchara, causing millions of dollars damage and displacing thousands of rural people (BEN 2006, p.3; Khan 2005, July 15). This has been damaging for the Government, as "[c]learly, weak institutional, legal and regulatory frameworks have contributed to the both Magurcharra and Tengratila incidents and their aftermath" (BEN 2006, p.3).

The Government has also been under intense and increasing pressure to solve the gas supply shortages facing Bangladesh. While the current energy infrastructure is

dependent on national gas supplies, experts predict that the nation's known gas reserves will be depleted in the coming decades or years, as "[e]stimates show that this hydrocarbon resource might dry up by 2020 unless new gas fields are discovered" (Islam 2009, p.133; also see BEN 2006, pp.18-20). These gas supply issues, consequently, have recently led the Government of Bangladesh to look to other energy options to supplement the national gas sector: the most prominent of these being coal.

Bangladesh had one operational coal mine, in Barapukuria, developed in an attempt to "reduce increasing dependency on natural gas" (Petrobangla 2009, p.9). The prospect of further coal-mining, from coal seams nearby this site in Phulbari, however, has caused much controversy in recent years. Primarily, it is the plan to build an *open-cut* coal mine which has divided media, government and civil sector opinions. National and international NGOs have claimed that an open-cut coal mine would displace or adversely affect over three hundred thousand rural people and cause extensive damage to the world heritage Sundarbans mangrove forest and the surrounding land (IAP 2008; UPI 2012, February 28). The 'Bangladesh Energy Network' (BEN 2006, p.2) similarly warns: "The proposed open-pit mining in Phulbari raises serious water and environmental pollution concerns. It will result in loss of rich agricultural land in an extremely densely populated country and will displace a large number of people from their homes".[38] Amid growing public pressure for a solution to Bangladesh's energy crisis however, the Government of Bangladesh has continued to investigate the prospect of an open-pit mine, and has been making plans to build a coal-fired electricity power plant with India (Ahmed 2012, January 29; Financial Express 2010, February 20; Habib 2010, February 21; Karim, 2010, December 21).[39]

[38] In late 2009, the Bangladeshi Prime Minister directed the Energy Ministry and Petrobangla to "conduct a study on social and environmental impacts of the open pit coal mining", but according to Energybangla (2009, November 16) this study was been "shelved". Instead, while debates over the open-cut mine continue, Bangladeshi upper ministry officials have been inspecting open-cut mines in Germany (New Age 2010, February 2).

[39] In early 2012, the 'Power Development Board' signed a deal with India for a joint coal-fired electricity production plant, to be built in Bangladesh in the coming years (Ahmed 2012, January 29; Financial Express 2010, February 20). While original plans are for the plants to only use imported coal from India, future plans may change if the Government approves the open-cut mine in Phulbari.

While gas and coal powered electricity production has dominated the Government's national energy agenda, there has still been some consideration given to non-fossil fuel, non-urban and non-electric energy. For example, in an attempt to diversify resources, address the widespread power outages, and build its renewable credentials, the Government of Bangladesh has announced plans to develop nuclear, solar and wind power plants for grid electricity generation. Until recently, nuclear energy was considered an unlikely or distant alternative (BEN 2006, p.8; Cookson 2010, April 14). However, in early 2010 the Bangladeshi Prime Minister signed a MoU with Russia to build a 1000MW nuclear power plant in Bangladesh (Bdnews24 2010, April 13).[40] In a turn towards more renewable energy sources, the Government also began plans for the establishment of large-scale solar and wind power plants. The Power Development Board invited applications for companies to build one 1MW and two 3MW solar-based power plants, and a 100-200MW wind-powered plant, to produce electricity to feed into a grid (Energybangla 2010, April 14). As these solar and wind electricity projects are on the Government's future agenda though, it remains to be seen whether they will be established.[41]

While energy for urban and industrial areas is the primary consideration in Government policies and investment, there has still been some attention given to rural areas, predominantly with a focus on electricity supply and transmission. Since the 1960s and 1970s, one of the most active actors in creating rural electrical infrastructure has been locally-run rural electricity cooperatives, called 'Palli Bidyut Samities' (PBS) (Power Division 2011). The PBS are nationally administered by the Government's 'Rural Electrification Board' (REB) (GoB 2004, p.11), but their daily operations are primarily controlled by the local PBS boards (NRECA 2003, pp.13-16). While the 70+ operating PBS have progressed with rural grid connections at a faster rate than previous national government attempts (REB n.d.), it is widely acknowledged that rural electricity is still severely under-developed in Bangladesh, especially for the poorer and more remote districts (Energybangla 2010, October 17; Siddiqui 2003, p.261). Despite the Government of Bangladesh's "vision" for "electricity for all by

[40] This MoU became a 'signed deal' in early 2012 (Matin 2012, April 2).

[41] See Power Division (n.d.) for updates on the Government's "expected" renewable energy "achievements".

2020" (GoB 2000), only approximately forty percent of rural households have electricity (World Bank 2013), which is increasing slowly at a rate of only 3% each year (Asaduzzaman *et al.* 2009, p.xxiii).

In terms of non-electric rural energy needs, the 'Bangladesh Council of Scientific and Industrial Research' (BCSIR) has, over the past decades, been investigating improvements to more traditional biogas and biomass energy technologies. The BCSIR's projects have, in general however, been primarily pilot or research projects which have been "limited in scale" (Hossain 2003, p.97; also see World Bank 2010, p.79). Under the BCSIR, various partners, such as the 'Institute of Fuel Research and Development' (IFRD), have been involved in trialling various biomass cook stove structures, producing a variety of more efficient, less polluting and more health-conscious cook stoves (BCSIR 2000; Hossain 2003, p.98; World Bank 2010, pp.15-21). However, attempts to roll-out these improved cook stoves have been inconsistent, with limited rather than continuing widespread dissemination and insufficient independent surveying to determine the stoves' success and sustainability (BEN 2006, pp.17-18, World Bank 2010, pp.79-80). The BCSIR, via the 'Local Government and Engineering Department' (LGED) and other partners, has also attempted to introduce biogas plants for improved rural gas supply (Hossain 2003, p.99; van Nes *et al.* 2005, p.15; World Bank 2010, pp.27-30). These biogas projects, however, have generally been plagued with difficulties, with incorrect construction and lack of follow-up maintenance and servicing, among other construction and dissemination problems (BEN 2006, p.28; World Bank 2010, p.6).

In sum, the Government of Bangladesh, over the past decades, has prioritised the production of gas-powered electricity for the national grid, with less regard for 'peripheral' energy needs. Transmission of this electricity into rural areas, for example, has been given far lesser priority. Even more so, non-electric and traditional energy uses have been considered a secondary energy concern. These trends, and their connection to the energy paradigms above, will be explored further shortly (in section 3.3.4).

3.3.2 Foreign Businesses

Since the 1990s, foreign businesses, predominantly multinational gas and coal companies, have been integral to the Government of Bangladesh's energy plans, with the Government claiming that "for investment in the hydrocarbon sector, foreign investment is very much essential for a country like Bangladesh" (Petrobangla 2009, p.8). As of 2009, twenty three gas fields had been discovered in Bangladesh, with gas being produced by three national and four international companies (Petrobangla 2009, p.30).[42] The result of this is "considerable FDI by international oil companies (IOCs)" (BEN 2006, p.3).[43] Over the past decades, however, there have been well publicised cases of criminal negligence, industrial accidents and bribery by these foreign businesses. The 1997 Magurchara gas well blowout mentioned above, for example, occurred under the supervision of an apparently "ill-prepared" US company; and, after a similar incident in Tengratila in 2005, a parliamentary enquiry found that there was bribery involved in the Government's decision to award the contract to an underqualified foreign operator (BEN 2006, p.3). In most of these accidents it has been rural lands and people who have been most adversely affected.

Foreign operators have also been involved in Bangladesh's coal sector. The currently operating underground coal mine has been under contract with a Chinese operator, 'China National Machinery Import and Export Corporation', since 1994 (Petrobangla 2009, p.28). A UK-based multinational company, called 'GCM Resources' (previously 'Asia Energy'), has been pushing for control of the proposed controversial open-pit coal mine in Phulbari (GCM 2009). A government-commissioned report in 2006 (which claimed that an open-pit mine at Phulbari posed environmental risk), suggested that irregularities existed in the contract with GCM (Energybangla 2009, March 14). Rather than act on the recommendations of this report, subsequent Bangladesh governments

[42] This number has been steadily rising, with the Government eager to increase the national gas supply available for energy consumption in Bangladesh. See, for example Quadir (2012, April 8) and UPI (2012, January 24).

[43] The reliance on foreign operators, however, has led to questions about just how nationally controlled this energy source is. "Some allege that IOC investments have resulted in a reduction in the E&P [exploration and production] funding by the government of BAPEX [Bangladesh Exploration and Production Company], the national E&P company. If true, this likely increases dependence on IOC's for E&P activities, contrary to the preferred objective of self-reliance in the energy sector" (BEN 2006, p.9).

have instead formed and reformed review committees.[44] In 2010, GCM offered to construct a 5000MW coal-fired electricity plant at the edge of the mine (New Age 2010, February 2). While such a massive production of power would significantly contribute to solving Bangladesh's electricity shortages, it remains to be seen whether this controversial project will go ahead (Firoze 2012, April 23).

In terms of investment in renewable energy, several MNCs will potentially be involved in the construction of the nuclear, solar and wind power plants mentioned earlier, as it has been reported that the Government is favouring foreign direct investment for their operations (Energybangla 2010, April 14). Involvement of MNCs in the rural energy sector, contrastingly though, has been negligible. A review of the literature and energy activities in Bangladesh suggests that foreign businesses are more interested in the large-scale energy projects which generally require sizeable investment, such as the gas and coal plants.

3.3.3 International financial institutions

In an attempt to help address Bangladesh's crippling power outages, the World Bank and Asia Development Bank (ADB) have been instrumental in financing the new gas-powered electricity plants and surrounding electrification infrastructure in Bangladesh. The Bangladesh Prime Minister inaugurated the first of two 120MW plants in February 2010 (Energybangla 2010, February 14). This project involved a US$186 million loan from the ADB (n.d.), as part of its Bangladesh "Power Sector Development" project. A review of the ADB's energy activities (Corral 2007) shows that this project exemplifies the type of energy project that ADB supports in Bangladesh; that is, electric energy security for Dhaka and industrial areas.

In 2008, the World Bank approved a loan of US$350 million for a 300MW gas plant, called the 'Siddhirganj Peaking Power Project', including transmission lines and gas pipelines (World Bank 2008b). By 2009 this had increased to a total of US$600 million (World Bank 2009a), and again in 2010 the project expanded. Originally, the

[44] Six review committees over ten years, according to Energybangla (2009, November 16).

Siddhirganj gas plant was intended to deliver electricity only during peak usage times, but the rising energy crisis has led to additional funding to convert the Peaking plant into a 450MW 'Combined Cycle Power Plant' (World Bank 2011). The World Bank has touted the environmental and efficiency credentials of this 'up-grade', though others have suggested that business and government mismanagement of the Siddhirganj project are also factors (Energybangla 2010, January 12; Kabir 2011, January 16).

Neither the World Bank nor the Asia Development Bank has invested in Bangladesh's coal sector. The Asia Development Bank was initially involved in financial support of the controversial open-pit mine. However, following pressure from community leaders in Phulbari and international NGOs, the Asia Development Bank pulled out of funding in 2008 (IAP 2008). The World Bank, similarly, appears to be concerned with world opinion on environmental issues, with its avoidance of controversial open-cut coal mining and its refusal to invest in contentious petroleum extraction plans (Energybangla 2009, March 14; Energybangla 2009, November 16; Energybangla 2010, July 18).

The other major World Bank energy project in Bangladesh, initiated in 2002-2003, is the 'Rural Electrification and Renewable Energy Development Project' (REREDP). The original RERED project included US$190 million for construction of new electricity grid transmission lines, substations, a solar home system program, and technical assistance (World Bank 2002). The break-down of the project by sector was 91% of funding for "power" (*i.e.* the grid electricity component) and 9% for "renewable energy" (*i.e.* the solar electricity component) (World Bank 2002).[45] In the early to mid 2000s, then, it appeared that the World Bank's rural energy strategy for Bangladesh was primarily focused on extending conventional grid electricity to rural areas.

[45] In 2009, the renewable energy component of the RERED project was expanded, with an additional US$130 million to help finance the costs associated with scaling up the project's solar home system sales (Energybangla 2009, August 2; World Bank 2009b). This is connected with Grameen Shakti's operations, however, and so will not be detailed here. It must also be noted that while several Bangladeshi energy projects are primarily financed and directed by the World Bank and ADB, there are other actors also involved. Foreign government aid divisions, such as the GTZ from Germany for example, have aided in funding various energy projects, including some traditional energy projects (see chapter five). Many of the more recent rural energy investments, though, have been developed in conjunction with Grameen Shakti, and thus will also be left for later chapters.

3.3.4 Energy priorities in Bangladesh

The diagram in figure 3.2 displays the subsectors, projects and planned projects, which have been outlined in the analysis above.[46] The energy activities which have had the most substantial investment by the key actors are those which are highlighted in red; that is, they can all be characterised as non-renewable, centralised, large-scale, and urban and industrial focused. While some minor projects which focus on the rural areas and renewable energy do exist, the dominant theme emerging from this review is the predominant focus on large-scale electricity and gas production for the grid, that is, for urban and industrial use. Thus the 'conventional' energy development priorities in Bangladesh appear to correspond with an energy security paradigm.

The central focus of the Government of Bangladesh has been to invest in energy security projects. It is attempting to secure the future of large-scale electricity production with plans for gas exploration, coal mining, coal fired plants, nuclear plants *etc.* Multinational companies have been heavily involved in the projects already in operation, and appear eager to participate in the future (for example, GCM in the Phulbar open-cut mine). There have been some serious problems and accidents associated with the Government and business run energy projects, though, with negative environmental and social effects primarily for rural areas. The proposed open-pit coal mining, for example, is considered by many to be "not well thought out", likely leading to "severe human dislocations, environmental and ecological disasters" in rural areas (BEN 2006, p.1).

The open-pit mine drama enfolding in Bangladesh is an interesting practical example of the contest between the energy security and energy sustainability paradigms. Despite the environmental risks of coal mining, Petrobangla and the Government Ministries appear to be focused on using this most expedient measure to end the current grid electricity shortages. "If the coal fields are brought into production *in a manner through which maximum coal* could be extracted, Bangladesh can avoid energy crisis in

[46] It must be noted that the energy activities in the diagram (and discussed above) are intended to be representative, rather than a comprehensive overview of the sector.

the coming days [italics added]" (Petrobangla 2009, p.10). The World Bank and ADB, contrastingly, have attempted to distance themselves from the most controversial of the large-scale energy projects, and have focused most of their resources on new gas-fired electricity plants and surrounding infrastructure. Thus while sustainable (non-polluting, renewable) energy options are not a priority for any of the major actors, energy sustainability norms and actors (*e.g.* environmental NGOs) have played a role in delaying the open-pit mine and deterring international banks from aiding the project.[47]

The World Bank's and the ADB's more 'sustainable' choices, interestingly, are still based on a non-renewable energy source, natural gas, which enables the continued production and consumption of large-scale grid electricity. Similarly, while investment in rural energy has not been entirely absent (see Asaduzzaman *et al.* 2009, p. xix), the energy poverty discourse is certainly a secondary consideration for the Government of Bangladesh, and has been dominated by a rural electrification approach by the World Bank (with its RERED project). That is, where alternatives to the 'conventional' energy agenda have been considered, most funding is directed towards energy activities which are aimed to help support national or rural economic growth. This observation and its connection with global trends in the 'mainstreaming' of energy alternatives will help us to build, in the following section, a better understanding of whose and what energy needs and forms have been most neglected in Bangladesh.

[47] Similarly, while the Government of Bangladesh's history of commitment to renewable energy sources has been weak, it did finalise its 'Renewable Energy Policy' in 2008, after years in the pipeline (BEN 2006, p.13; GoB 2008).

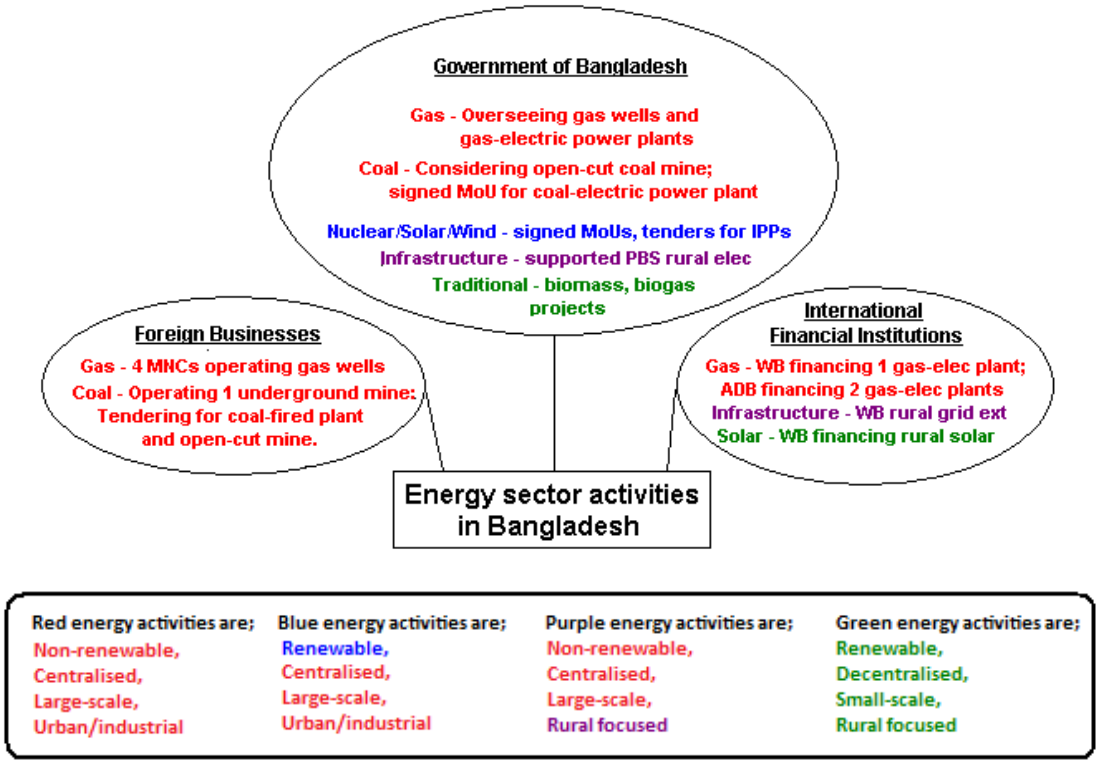

Figure 3.2: A representative overview of Bangladesh's energy sector. The major actors in energy development in Bangladesh appear to be predominantly involved in non-renewable, centralised, large-scale, urban and industrial focused energy activities.

In this review of the central actors in the Bangladeshi energy sector the focus has been on the Government of Bangladesh, MNCs and the international aid banks. NGOs and local businesses have not been examined, as they currently have a much less significant role in the energy sector. Some local businesses have been involved in bidding for IPPs (Independent Power Plants), such as 'Rahimafrooz' (Energybangla 2010, April 14). Some local NGOs, such as BRAC (n.d.), have been involved in pilot rural energy projects. These have tended to be small commitments however, rather than sector-changing involvement. The vast rural development sector in Bangladesh, for example, is generally more concerned with microfinance and other social welfare provisions than with energy. The main exception to this is the social business Grameen Shakti. The aim of this chapter, however, is to explore the environment in which Grameen Shakti exists, so it has been be excluded from the review above.

3.4 Bangladesh's reliance on, and neglect of, traditional rural energy

An exploration of the energy priorities of the major actors in Bangladesh's energy sector has helped us to construct an impression of the 'conventional' approach to energy development in Bangladesh. The questions we will attempt to explore in this section concern the consequences of this, by examining 'who' is being most marginalised, and 'what' energy forms are currently being most neglected. What we will see, in the analysis below, is the continued importance of traditional, rural energy in Bangladesh today, and thus the need for more attention to this energy sector. The aim of this analysis is to highlight the hidden energy crises of Bangladesh (Asaduzzaman *et al.* 2009, p.66) and to gain an appreciation of what opportunities (and difficulties) an energy-focused social enterprise like Grameen Shakti has for addressing these neglected energy issues.

3.4.1 A rural-urban imbalance- exclusion of the poorest, most remote and marginalised

As highlighted in the review above, the rural energy sector of Bangladesh has historically "not received sufficient attention", with inconsistent and/or underfunded investments and initiatives (BEN 2006, p.1). Bangladesh, however, is still very much reliant on and based in its rural agricultural regions, with approximately 72% of the total population still living in rural areas (CIA 2010). Furthermore, in direct contrast to the current prioritisation of energy for urban industrial growth, national statistics indicate that it is rural *domestic* activities that continue to dominate energy consumption in Bangladesh. The pie chart in figure 3.3 demonstrates that, in 1990, the domestic sector consumed 65% of Bangladesh's total energy output. More recent studies of energy use in Bangladesh confirm that domestic rural energy has historically been, and continues to be, the "single largest component of Bangladesh's energy sector" (BEN 2006, p.1, 8; also see Asaduzzaman *et al.* 2009, p.xx; Hossain 2003, p.97).

Figure 3.3: Percentage of energy consumed by each sector in Bangladesh, in 1990 (GoB 2004, p.13). The total energy consumed in 1990 was 683 petajoules; the domestic sector, then, was responsible for using 443 petajoules (GoB 2004, p.13).

In rural Bangladesh, less than forty percent of all homes have access to the national electricity grid (World Bank 2013). The funding commitments by Government and international institutions to produce energy for the national grid (as highlighted in the preceding sections) then, currently do little to address the energy consumption needs of rural households. The Government's aim of "electricity for all by 2020" is based on the expected spread of PBS electricity cooperatives across Bangladesh, in order to connect more rural households to the grid. The PBS were designed (by USAID and GoB), however, to only target wealthier and more centralised rural areas (NRECA 2003, p.4). That is, the establishment of the PBS cooperatives was focused on "financially viable" locations (REB 2002, p.1), in "densely populated areas having good transportation and communication systems" (NRECA 2003, p.4). Many areas, districts and communities in rural areas, however, are physically isolated due to the country's

natural geography.[48] Consequently, poor, remote and vulnerable regions have generally been excluded from Government electricity initiatives.[49]

With the impending supply failure of Bangladesh's national gas wells and the environmental and social controversies surrounding coal, however, it can be questioned whether integration of rural communities into the national grid is necessarily the best solution. It can be conjectured, furthermore, that with gas supplies becoming scarcer it is electricity for the urban grid which will be prioritised over rural areas. And while the Government is proposing to build solar and wind power plants, the majority of funding is not likely to be directed to more marginalised rural communities. That is, energy sustainability solutions are unlikely to benefit rural households if they are nationally controlled, *i.e.* while Government continues to focus on energy security, rather than energy for the poor. Furthermore, it can be speculated that energy poverty in rural areas cannot be sufficiently addressed by focusing on the provision of electricity alone. An 'energy services' approach, as adopted below, suggests instead that improvement to biomass energy options is the most needed energy initiative in Bangladesh, especially for rural women.

3.4.2 Insufficient attention to biomass energy

The overview of the energy activities of the major actors above indicates that traditional forms of energy generation and use have been relatively neglected in Bangladesh. While the Government's BSCIR has been involved in biomass and biogas energy projects since the 'fuelwood crisis' was popularised in the 1970s, these have

[48] For example, Bangladesh is situated on the Ganges delta plain, with sprawling river branches isolating many of the more remote villages in southern Bangladesh.

[49] The PBS are an unusual form of cooperative, as they are initiated by the national REB rather than through local initiative. The idea of creating rural energy cooperatives in Bangladesh was proposed by USAID in the 1970s, when cooperatives were a more popular development solution in the US. The Government policy guidelines for the PBS are interesting though- they include the banning of employee unions, and the development of PBS only in economically viable regions as noted above. That is, despite being cooperatives, the PBS have, from inception, been directed by both international and national development norms and actors. See NRECA 2003 and REB 2002.

not been given significant funding or become a national energy policy priority.[50] It is biomass energy, however, which still dominates national energy consumption. As noted in a recent World Bank report: "Biomass continues to play a critical role in Bangladesh's rural energy balance; today, it is just as important, if not more so, than 25 years ago" (Asaduzzaman *et al.* 2009, p.xx).

The pie chart in figure 3.4 provides us with an overview of the various energy fuels used across Bangladesh. It reveals that biomass is the most consumed fuel across all sectors (rural and urban), contributing over 70% to the national fuels used. Traditional biomass fuels include wood, dung, leaves, crop residue and straw. In figure 3.5, we can see that more than 97% of the energy needs of rural households are supplied by these traditional biomass fuels (Asaduzzaman *et al.* 2009, p.xx).[51]

Figure 3.4: Percentage each fuel type contributed to energy consumption in Bangladesh, in 1990 (GoB 2004, p.13).

[50] As noted in a recent World Bank survey of the field, "in various government documents, the energy chapter discusses electric power, gas, coal, and liquefied petroleum gas (LPG); while rural energy is relegated to the forestry section of the agricultural chapter", with biomass fuel supply and social forestry, for example, not considered to be 'energy sector' issues (Asaduzzaman *et al.* 2009, p.2). While, as will be argued below, the agricultural and forestry component of traditional energy is vitally important, the lack of acknowledgement of this energy sector in national energy documents is indicative of its secondary status in terms of national energy security.

[51] See Jashimuddin *et al.* (2006) and Miah *et al.* (2003) and Akther *et al.* (2010) for more information on fuel consumption patterns in Bangladesh.

Figure 3.5: Percentage each fuel type contributed to energy consumption in rural Bangladesh, in 2004 (data from a 'Bangladesh Institute of Development Studies' survey in 2004, cited in Asaduzzaman *et al.* 2009, p.xx).

According to the classic energy ladder, this prevalence of biomass use indicates that Bangladesh is still on the lowest rungs of energy development. A rural electrification approach would consider this a prime example of the need for better electricity access, so that rural households can 'leap frog' to modern energy technology. And indeed, apart from some exceptions, this does appear to be the perspective and tactic employed by the major investors in Bangladesh. Contrarily, an 'energy services' approach would firstly consider the energy needs that these fuels satisfy.

Electricity in rural Bangladesh is primarily used for lighting, irrigation, some machinery and appliances. For rural households without electricity, kerosene oil and diesel are the alternative fuels most often employed for these tasks (Islam *et al.* 2008, p.303). Biomass, alternatively, is traditionally used for cooking and heating, primarily within the home (BEN 2006, p.17). For most rural households in Bangladesh, electric cook stoves are not yet a financial option. Electric stoves for cooking in rural households are generally too expensive to purchase, as is the electricity needed to power them (Dutta 2003, p.17). Thus while well executed (and reliable) rural electrification programmes,

which provide electricity for lighting, irrigation *etc*, may be very beneficial (as documented by Cecelski 2000), electricity cannot yet replace biomass fuel to address the primary energy need of most Bangladeshi households (BEN 2006, p.8).

The rural electrification approach to rural energy in Bangladesh, therefore, is insufficient if it leads to neglect of traditional energy needs concerning biomass cooking. Since it is women who do the vast majority of cooking in rural homes, this energy development issue is inherently gendered. That is, while rural women are the primary actors in the largest energy sector in Bangladesh, it is this form of energy which is, ironically, also the most neglected. This circumstance should be of central concern, especially considering the health and well-being consequences of the current biomass cooking techniques used by Bangladeshi women.

3.4.3 The invisibility of women's energy needs and concerns

As argued by Dutta (2003, p.17), access to electricity "does not help address the major energy problem that most women in rural areas face in terms of their practical needs: their daily cooking requirements". Primarily, in rural Bangladesh, men are increasingly engaged in income-generating activities outside of the home and women do the cooking, fuel collection, household chores and, often, subsistence agricultural work (BEN 2006, p.32). The majority of cooking by rural women is via traditional artisan-style biomass cook stoves. This is usually constructed locally with clay mud or other available materials. While the designs do vary, in general the unit consists of one or two pot holes and an opening to insert the biomass fuel (see figure 3.6). This design is very inefficient. Studies have shown that for the traditional cook stove only 5-15% of the potential energy of the burning biomass fuel is utilised (Hossain 2003, p.98). For most rural women, collection of biomass fuel can take considerable time, labour, and sometimes cost, all of which could be improved with a more efficient stove or other cooking technology (Asaduzzaman *et al.* 2009, p.16).

Figure 3.6: A traditional single-pot cook stove (photo by author, Bangladesh village 2008).

Furthermore, the design of the traditional cook stove allows all of the smoke produced to billow out into the user's face and cooking area (see figure 3.6). Daily exposure to this smoke has been proven to lead to serious health problems for Bangladeshi women and children. The smoke has been documented to cause "acute respiratory infection, particularly pneumonia and even still-births in women" (BEN 2006, p.32). In a recent study in Bangladesh, Miah *et al.* (2009, p.75) found that "70%, 68%, 83% and 63% of women had headaches, lung diseases, asthma and cardiovascular diseases, respectively" linked to prolonged exposure to traditional cook stoves. A 2006 study by the World Bank (2010, p.5) found that air pollution, primarily from traditional cook stoves, was the cause of over 30% of environmentally-induced illnesses (see 'indoor air pollution' in figure 3.7).

Improvements in traditional biomass cooking, then, would make a significant difference in the daily welfare of millions of rural Bangladeshi women. Several viable alternative cooking solutions do exist, which could replace or improve the traditional cook stove. One of these is the biogas plant, which produces methane gas for cooking. Alternatively, the traditional cook stove itself could be improved by making the design more efficient and less smoky. As argued by Miah *et al.* (2009, p.76): "In Bangladesh, there is a need to develop fuel-efficient wood-burning stoves so as to improve health and hygiene, reduce drudgery of women, reducing fuel consumption, and improve forest protection and the environment". The Government of Bangladesh has

supported several small projects to develop biogas plants and improved cook stoves, but, as noted earlier, these have been "on a very small scale and have not always been successful" (World Bank 2010, p.79).

Consequently, women's energy needs and health concerns continue to be insufficiently addressed in the rural energy sector. This situation helps to highlight the recurrent theme of the structurally embedded 'invisibility' of the energy needs of some of the most marginalised members of Bangladeshi society. The causes and drivers of these inequalities can be found at the local, national and international levels and will affect the ability of any agency, including a social enterprise, to address energy poverty in Bangladesh, as we will now explore.

Figure 3.7: Factors contributing to 'environmental' diseases in Bangladesh (data from World Bank 2006, cited in World Bank 2010, p.5).

3.5 What role for a social enterprise in Bangladesh's energy sector?

In the following chapters we will begin to explore the activities of the thesis' primary case study, the energy-focused social enterprise Grameen Shakti. In order to do so, we needed to review the broader Bangladeshi energy sector and gain an appreciation of where and how a social enterprise might be most beneficial within this arena. Analysis of Government policies, foreign business activities and international projects, in section 3.3, indicates that there is significant need for a different approach to energy development for rural Bangladeshis. Assessment of the energy poverty paradigm (in section 3.2.3.3) suggests that a diversified strategy, addressing both modern and traditional energy forms, would be most beneficial for rural people. In particular, the analysis in section 3.4 demonstrates that the biomass cooking needs of rural women is an aspect of energy development that is in critical need of attention. A social enterprise's attempt to address these energy needs, however, will not be without considerable difficulties.

Much of the social enterprise literature promotes the ability of social enterprises to succeed in economically challenging situations, such as addressing energy market failures in rural areas (see section 2.3.1). However, while these financial challenges will no doubt be significant, it is the political dimensions which, arguably, will be the most difficult for a social enterprise in Bangladesh to negotiate. Local, national and international power dynamics and norms have potential influence over everyday actors like social enterprises. Within the Bangladesh rural energy sector specifically, there are local elite-poor hierarchies, patriarchal inequalities and international development norms which a social enterprise would have to contend with.

In order to address rural people's biomass cooking needs, for example, a social enterprise would first have to deal with the complex local socio-political issues surrounding fuel supply and collection. Despite the current focus on rural electrification, the increasing fuelwood gap in rural Bangladesh is still a fundamental issue. Access to biomass fuels in rural areas, however, is controlled by local land-

owning elites and local government bodies. In the past, rural households were able to access biomass fuels from common woodlands (Asaduzzaman *et al.* 2009, p.1). However, as the rural population has grown, these forests have diminished, and the land (and thus biomass fuel) has become more valuable and thus contested over.[52] Generally, the increasing scarcity and monetarisation of fuelwood in many districts in Bangladesh has exacerbated wealth inequalities and energy poverty; with poorer rural households needing to travel further for biomass collection, use inferior fuels such as twigs and leaves and/or become more reliant on their resource-rich neighbours or landlords (Akther *et al.* 2010, p.144; Asaduzzaman *et al.* 2009, p.66; Miah *et al.* 2009, p.75). The politics of this situation becomes more complex for a social enterprise to deal with when we consider (as noted above) that biomass collection and use also has an inherently gendered dimension.

As the primary users and collectors of biomass fuels, it is women who are most affected by these biomass fuel supply and access difficulties. That is, along with the health concerns of using a traditional cook stove, women are also facing precarious circumstances with the growing fuelwood gap. For a social enterprise to address these concerns, it would have to deal with the local and international discriminatory gender norms which currently reinforce the neglect of these issues. It is women's domestic labour (in the private sphere of the home) and hence women's technologies and energy needs, for example, which are not highly valued in rural Bangladeshi society (see section 8.2.2).

While these patriarchal norms have a basis in traditional culture, they are also reinforced by the neoliberal conception of development. In particular, the assumption that income generation in the (capitalist) market place is the key to development, ignores the role that unpaid (mostly female) labour contributes to the household, community and economy (Dutta 1997, pp.285-286; Warner and Henderson 1995, p.51). Activities which are considered 'free', such as collecting or cooking with biomass in the home, are often not prioritised. As argued by Clancy *et al.* (2003, p.6), "biomass

[52] There have been reports, for example, of local government officials 'selling' the rights of common areas to commercial interests and effectively excluding rural people from collection of fuelwood (Agarwal 1987, p.16).

in rural areas is collected at zero monetary cost, mainly by women and children, and so it falls outside national energy accounts, the result of which is that the issue renders itself invisible".

In order for a social enterprise to comprehensively address rural energy poverty, then, it would need to 'resist' the patriarchal norms embedded in both local and international conceptions of energy development. This may require the social enterprise to not only shift its focus away from the 'conventional' energy priorities (*i.e.* large-scale fossil fuel energy production for industry), but to also shift away from the 'mainstreamed' alternative approaches to energy development in Bangladesh, such as rural electrification, to find an alternative approach which would prioritise sustainable biomass supply and cooking solutions for rural women. That is, consideration of 'gender' can help to reveal the political dimensions and assumptions which currently permeate energy development in Bangladesh (at a local and international level), and how a social enterprise could begin to address these issues.

A social enterprise's choice of which energy needs to address, and how to do so, however, will depend on its own conception of 'development', 'social enterprise', and 'rural energy'. This chapter has developed a number of suggestions for how to better address rural energy in Bangladesh (such as targeting women's biomass energy needs). The mission objectives of a social enterprise in this field, however, will depend on how it identifies itself (*e.g.* where it sits on the hybrid graph, in section 2.2.2), and what international and national influences have shaped its conception of energy development.

In terms of an 'everyday IPE' analysis of our case study, this raises a number of pertinent questions. Can an energy-focused social enterprise, like Grameen Shakti, 'resist' the dominant national and international energy discourses, to create and enact its own approach to energy development and address more 'peripheral' concerns? And, if it does attempt to do so, will it be able to successfully negotiate the local political minefields which surround complex rural energy issues? Politically-based questions such as these are largely absent from the social enterprise literature. And

yet, as will be demonstrated in the final analysis (in chapter eight), they are vital for determining the ability for a social enterprise to provide a better energy development alternative for everyday people.

3.6 Conclusion

The purpose of this chapter has been to consult the broader energy development literature and establish an understanding of the current trends, priorities and needs for energy development in Bangladesh. Analysis of the Bangladeshi energy sector revealed the reoccurrence of a familiar imbalance, a tendency towards energy security over and above the energy development paradigms of energy sustainability and energy poverty. While 'energy for the poor' is becoming a more popular mantra in development, it is still not prioritised in Bangladesh. The lack of energy access in rural areas is a proclaimed area of concern (GoB 2004, p.13), but these options are still in the periphery. They are considered within the context of the dominant energy hegemonic paradigm, not as an alternative to it.

Despite this, energy poverty has not been entirely neglected, with some projects focusing on energy services for rural areas. It was argued, however, that in Bangladesh, as in other developing countries, the rural electrification approach to energy development in rural areas has dominated. The consequence of this is that grid electricity projects have been prioritised over biomass and biogas energy projects. The shortage and unreliability of grid electricity is undeniably a serious impediment to industrial productivity, small businesses and the needs of households who have grid connection. However, it can be argued that biomass-based cooking solutions should be given significantly more attention in a country as reliant on biomass energy as Bangladesh. This is especially so, given the negative impact that traditional cooking has on rural women. Local socio-political complications, structural inequalities, along with international energy norms, though, will make addressing these aspects of rural energy a difficult task.

It is into this scene that we will now introduce the primary case study of the thesis, the energy development social enterprise Grameen Shakti. In the following chapters, Grameen Shakti will be introduced and analysed. It will be queried whether its unique position, as a social enterprise, can positively contribute to the energy needs of rural people in Bangladesh. In doing so, we will explore whether Grameen Shakti's approach challenges the status quo of energy development in Bangladesh. Analysis of the successes and difficulties which Grameen Shakti has encountered will itself prove enlightening in an attempt to gain a comprehensive understanding of how energy needs, especially for those neglected by current energy policy and funding, are complicated by a range of local and national socio-political issues and international development norms. In the following chapter, therefore, we will begin this examination by properly introducing the social enterprise, Grameen Shakti.

Chapter 4 – Introducing Grameen Shakti

4.1 Introduction

Grameen Shakti is a non-profit organisation, operating under the banner of the Grameen family of social enterprises in Bangladesh. True to its name, 'Village Energy', the overarching 'business' of Grameen Shakti revolves around the sale of renewable energy technologies to rural Bangladeshi households. Behind these sales, though, is an unconventional organisation, with a unique mix of social and financial goals and activities. Before we can begin to explore and assess this social enterprise's ability to positively contribute to energy development in Bangladesh, we firstly need to gain a more comprehensive understanding of Grameen Shakti's basic composition and operations. This chapter, then, aims to provide necessary background information on Grameen Shakti's configuration, its mission objectives, and finally, its energy technologies.

The chapter will begin with an overview of Grameen Shakti's composition, focusing on its history, organisational structure and finances. Following this, the chapter will explore Grameen Shakti's mission, as envisioned by various actors in the organisation. This will help us to gain a better understanding of how Grameen Shakti views energy development and how it aims to contribute to energy development in Bangladesh as a part of its social mission or social bottom-line. Finally, the chapter will take a closer look at Grameen Shakti's three main energy products: solar home systems, biogas plants, and improved cook stoves.

These details, concerning Grameen Shakti's history and affiliations, its social mission and its technologies, will provide a useful descriptive background to the case study analysis. Importantly, though, the information provided in this chapter will also prove essential for understanding Grameen Shakti's choices and position in the energy sector

of Bangladesh. Specifically, the information concerning Grameen Shakti's creation, finances and social mission will be particularly useful in assessing how national and international actors and ideologies have influenced Grameen Shakti's approach to energy development over time; and the information concerning Grameen Shakti's technologies will be vital in exploring the potential (and limitations) for Grameen Shakti to positively affect local people and their energy needs. In sum, the background details provided here will ultimately help to support the analyses in chapters seven and eight concerning Grameen Shakti's ability to provide an effective development alternative for rural Bangladeshis, and its vulnerability to co-option by the 'conventional' approach to energy development and neoliberal development more broadly.

4.2. Grameen Shakti's background

4.2.1 History

Grameen Shakti started as a pilot project by Muhammad Yunus into the viability of solar home system (SHS) sales to households in rural Bangladesh in 1995 (Yunus 2010). It began by acquiring 20 solar home systems, using funding from the 'Rockefeller Brothers Fund' (US), solar panels from 'Solar Power Light Company Ltd' (Sri Lanka), accessories from 'Lotus Energy' (Nepal) and batteries from 'Rahimafrooz' (Bangladesh). These solar home systems, which provided basic lighting and electricity, quickly proved popular with rural households. According to Yunus (2010): "This was the beginning of Grameen Shakti".

After the initial phase proved successful, the program was expanded to 100 solar home systems, with extra funding by the 'Rockefeller Brothers Fund' and 'Stichting Gilles' (Belgium). Again, the trial was deemed successful, and in 1996 Grameen Shakti was launched as a legal nonprofit organisation, the next social business in the expanding Grameen family. Mr Dipal C. Barua (a member of the Grameen Bank board) was appointed as the Managing Director shortly after Grameen Shakti's inception, where

he remained for the next 15 years. Grameen Shakti slowly constructed rural branches across Bangladesh and acquired new forms of funding and sales mechanisms to help disseminate its solar home systems to rural households and small businesses (see figure 4.1 below).

In the mid-2000s, under direction from Dipal Barua, Grameen Shakti expanded into other renewable energy technologies. In 2005 it started selling biogas plants to family-owned and small commercial farms and in 2006 it started selling improved cook stoves to rural households and small businesses (Grameen Shakti n.d.(a)). While Grameen Shakti has, and still is, experimenting with various other activities and technologies, it is these three products that form the backbone of the company: solar home systems for electricity generation, biogas plants for methane gas production, and improved cook stoves for more efficient biomass cooking. As we will now explore, Grameen Shakti's initial trajectory, as an organisation that services rural households with energy technology sales, has shaped its organisational structure.

Figure 4.1: A map of Grameen Shakti's activities in 2008. Source: Grameen Shakti (2008).

4.2.2 Organisational Structure

Figure 4.2: The Grameen Bank building in Dhaka. Source: Photo taken by author, Dhaka 2009.

Grameen Shakti's organisational structure is presided over by the Grameen Shakti Head Office, located in the Grameen Bank building in Mirpur-2, Dhaka (see figure 4.2). Outside of Dhaka there are 14 divisional offices, 158 regional offices and 1181 rural branch offices throughout Bangladesh, as of January 2012 (Grameen Shakti 2012). Grameen Shakti (2012) employs over 11,400 employees, mostly located in the rural branch offices. It is a hierarchically structured organisation, with the key decisions being directed from the top down, and the sales being carried out by the bulk of the staff at the branch level (see figure 4.3 below). The branches are dispersed across Bangladesh, with at least one branch in each of Bangladesh's 64 districts (see figure 4.1 above). The sales, daily finances and the sourcing of local materials are generally organised by the branch or regional offices, while the international finances and sourcing of imported materials are coordinated by the Head Office.

As noted above, the Managing Director from the early years of Grameen Shakti until late 2009 was Mr Dipal C. Barua. Mr Abser Kamal, the General Manager from 2004 to 2009, is now the current Managing Director or CEO (Kamal 2010, p.18). Grameen Shakti has a Board of Directors, which hail from various Grameen organisations. The day to day running of Grameen Shakti, however, is done by the Managing Director and staff at the Head Office and lower offices. The chairperson of Grameen Shakti is the

founder and most public figure of the Grameen family, Professor Muhammad Yunus. The other members of the Board of Directors are: Professor H. I. Latifee from Grameen Trust; Dr Muhammad Ibrahim from CMES; Mrs Nurjahan Begum from Grameen Shikkha; Md. Shahjahan and Md. Siddiqur Rahman from Grameen Bank; Md. Ashraful Hasan from Grameen Knitwear Limited (Grameen Shakti n.d.(b)).

Apart from the Head Office and sales offices, Grameen Shakti also has 46 Grameen Technology Centers (GTC) throughout Bangladesh (Grameen Shakti 2012). These centres are involved in training users and technicians, and for coordinating the construction and testing of various accessories, primarily for the solar home systems, such as light-hood assembly and circuit board testing. Each GTC is staffed by two to four engineers, who oversee the various activities at the centres.

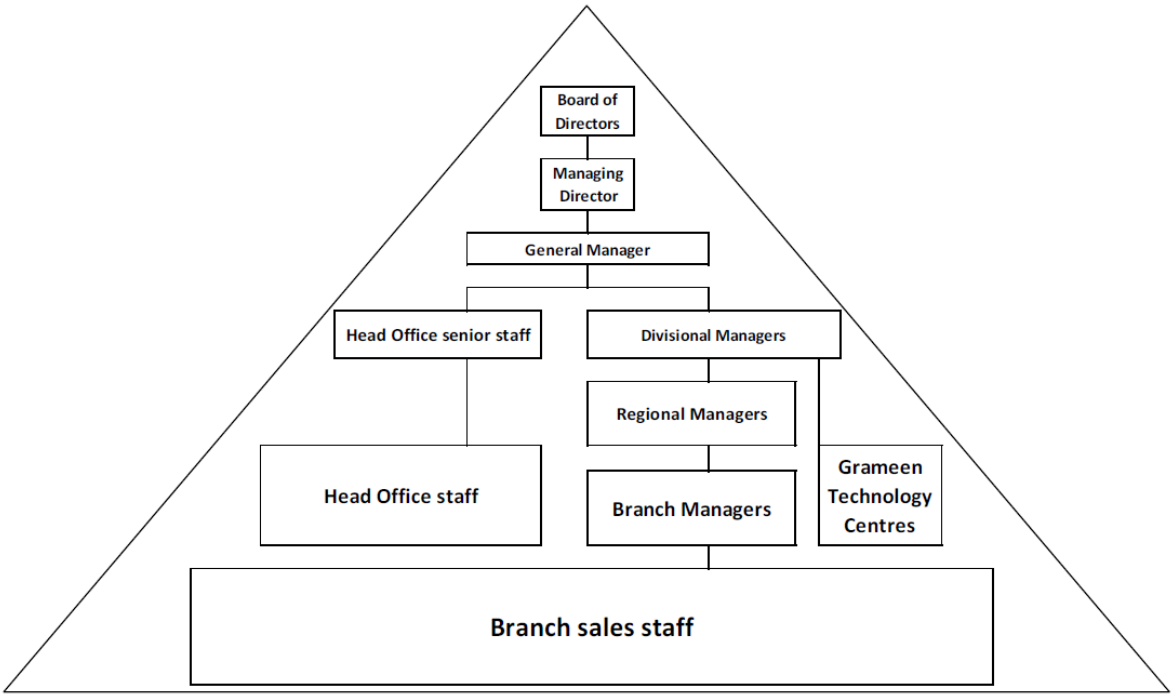

Figure 4.3: A simplified overview of Grameen Shakti's organisational staff structure, as at January 2009. Source: Author's field work, Dhaka 2008-2009.

4.2.3 Finances

As noted above, Grameen Shakti is legally a nonprofit organisation. However, as one of Yunus' social businesses, it is committed to having the financial stability of a traditional business. This involves Grameen Shakti creating revenue from a variety of sources, including revenue earned from the sale of its products and grants and loans from external funders. The composition of its finances has varied over the years, and, while Grameen Shakti "reached economies of scale and break-even in 2002" (Barua 2008, p.4), its continued ability to financially break-even is still reliant on these external funding sources (see section 8.4.1.3).

Below, we will briefly explore the funding situation for Grameen Shakti's three main products: solar home systems, biogas plants and improved cook stoves. Each product is in some way connected to an internationally-funded project, which supports the activities of a number of Partner Organisations (POs), including Grameen Shakti. The projects are comprised of several funding elements, including: small grants for each product sold, to either the customer or to the POs to encourage sales; low interest loans to the POs for each product sold, so that this can be passed on to the customer as a soft credit repayment option; and, funds to POs to enable them to advertise, publicise, and train their staff and customers in the products' uses. In this way, the Partner Organisations (such as Grameen Shakti) gain revenue, firstly from the various grants, and secondly from the sale of their energy products, primarily through the price of the product and the 'interest' charged.[53]

4.2.3.1 Funding for solar home system sales

Grameen Shakti began its original solar pilot program with a US$16,700 grant from the Rockefeller Brothers Fund in 1995. When this proved successful, it received a further US$75,000 and US$40,000 in funding (Yunus 2010). In 2003, Grameen Shakti began to receive more regular financial support with the introduction of the 'Rural Electrification and Renewable Energy Development Project' (REREDP) headed by the

[53] For legal reasons, Grameen Shakti refers to the interest that customers pay (in order to receive a loan from Grameen Shakti for the technology purchased) as a 'service charge'.

World Bank (see section 3.4.3). This project involved Partner Organisations (including Grameen Shakti) receiving small loans and grants for each solar home system sold, along with extra funding for training and advertising.

The key funders in the original REREDP included the World Bank, the 'Global Environment Facility', and the German government aid institutions KfW and GTZ (GEF n.d.; IDCOL 2010a). Another significant actor was the 'Infrastructure Development Company Limited' (IDCOL), which is a Public Limited Company of the Government of Bangladesh. IDCOL is the intermediary between the REREDP funders, listed above, and the Partner Organisations. "IDCOL provides refinancing facility to the POs and channel grants to reduce the SHSs costs as well as support the institutional development of the POs. In addition, IDCOL also provides technical, logistic, promotional and training assistance to the POs" (IDCOL 2010a).

In the early years of the REREDP, the grants and loans were provided to stimulate the market, in terms of both customer sales and institution building. The individual SHS loans to Partner Organisations included a 2-year grace period followed by interest of 6%*p.a.* thereafter. As noted in section 3.3.3, in 2009 the World Bank extended the original REREDP, continuing and substantially increasing its financing of solar sales (World Bank 2009b). While most of the original grants have tapered off (IDCOL 2010b), the low interest loans do continue, enabling Partner Organisations to offer low interest credit options to their solar home system customers.

4.2.3.2 Funding for biogas plant and improved cook stove sales

While the RERED project only funds the sale of solar home systems, Grameen Shakti has also received financial support for its improved cook stove and biogas plant sales through the 'Renewable Energy and Energy Efficiency Programme' (REEEP) and the 'National Domestic Biogas and Manure Programme' (NDBMP) respectively. The NDBM Programme, which is also facilitated by IDCOL, provides small grants and loans to its Partner Organisations (including Grameen Shakti) to sell biogas plants in rural Bangladesh. The NDBMP is being run from 2006 to 2012 with support from the Government of Bangladesh, SNV ('Netherlands Development Organisation') and KfW

(IDCOL 2010a; van Nes *et al.* 2005). The project involves grants for advertising and training, individual cash subsidies to the biogas plant customers, and low interest loans for the POs for each biogas plant sold (at 6%*p.a.* after a 1-year grace period) (IDCOL 2010a). This is similar to the solar home system project, in so far as it includes market development and small loans for the POs. However, the biogas plant loan has a shorter grace period (earning less income for the POs), and it is the customer (rather than the PO) who receives a subsidy (9000Taka ~ US$130) on the cost of the biogas plant (IDCOL 2010a).

Grameen Shakti's improved cook stoves sales have benefited from two key funding projects over the years. The first of these was coordinated by GTZ (now under GIZ), the German government's aid arm. The 'Renewable Energy and Energy Efficiency Programme', under the GTZ's 'Sustainable Energy Development' project, ran from 2007 to late 2009. It financed the sale of improved cook stove sales to over 100 Partner Organisations in Bangladesh, with small grants and loans for each product sold (Gomm 2009, January 12; GTZ n.d.). The REEEP also provided grants for market development, with some funding for advertising and training.

In 2010, the second improved cook stove funding project commenced. Rather than a traditional development project, however, the funding was part of the 'Clean Development Mechanism' (CDM), designed to facilitate international carbon offsets (UNFCC n.d.). After several years of testing, Grameen Shakti's improved cook stoves gained accreditation as a carbon-reducing technology. This saving of greenhouse gas emissions can be sold on the carbon market to offset the emission of clients, such as international businesses. The carbon emission reductions from the Grameen Shakti improved cook stoves are currently under contract with JP Morgan's 'Climate Care' CDM company (Kamal 2011, March 24). Grameen Shakti's customers, upon purchase of the improved cook stoves, sign over their CDM payment to Grameen Shakti. Grameen Shakti, then, benefits from this and in return is expected to lower the price of the improved cook stoves, minus any expenses from distribution (UNFCC 2009a, p.2).[54]

[54] While Grameen Shakti's solar home systems and biogas products also reduce carbon emission, they are not eligible for the CDM scheme while being funded by other projects. Communal biogas plants, as a

In sum, all three of Grameen Shakti's products are partially supported by internationally funded projects. Along with revenue from sales, and international awards presented to Grameen Shakti (see section 7.2.1), these external funding elements help keep the social business afloat financially. In this way, we can characterise Grameen Shakti as a primarily locally-run social enterprise, with a combination of locally-based and internationally-sourced revenue streams. The commonality, in all of these revenue sources, is their focus on the sale and promotion of improved energy technologies. As will now be explored in detail, the centrality of energy technologies also characterises Grameen Shakti's mission objectives, shaping its approach to energy development in rural Bangladesh.

4.3 Grameen Shakti's mission

Grameen Shakti does not advertise a consistently defined or phrased 'mission statement'. Instead, a number of objectives or priorities are mentioned or alluded to in Grameen Shakti's publications (for examples see Barua 2001, 2002; Kamal 2010; Yunus 2010). An overview of the aims identified by various Grameen Shakti actors over the last 15 years, however, does reveal a continuous central theme. As we will now explore, the primary social objective which reoccurs in all Grameen Shakti publications is the successful dissemination of affordable, renewable energy technologies to rural Bangladeshis. On Grameen Shakti's website, for example, it is claimed: "Like other Sister Companies of Grameen Bank, Professor Muhammad Yunus established Grameen Shakti as a not-for-profit company in 1996 to promote affordable, clean, modern, and sustainable renewable energy technologies to the rural people of Bangladesh" (Grameen Shakti n.d.(c)).

The creation of Grameen Shakti in 1996 was originally motivated by the desire to help address the critical lack of electricity in rural Bangladesh (Yunus 2010). Fundamental to Muhammad Yunus' initial vision was Grameen Shakti's ability to supply solar-electric

possible future venture by Grameen Shakti, are currently being investigated for CDM accreditation (UNFCC 2011).

technology to rural households with an affordable, sales-based approach. According to Yunus (2010), he had been contemplating the potential of renewable solar photovoltaic (PV) technology for several years, but was waiting for the solar panels to become less expensive and more economically viable for a Grameen social business venture. “We need to focus on it [solar PV] as a consumer product. People need it, we can provide it in an affordable way” (Yunus 2010). “Affordability” included the use of “soft credit” financing for rural customers and promotion of the product’s ability to “create income” for the customer (Barua 2001, pp.207, 209; Barua 2002, p.33). From its inception, then, we can see three clear objectives: the supply of electricity to rural households, from a renewable source, which could be sold as an affordable product.

Several years after Grameen Shakti’s foundation, the Managing Director Dipal Barua (2001, 2022) published several articles in different journals, such as *Renewable Energy* in 2001 and *Boiling Point* in 2002. The stated objective of Grameen Shakti in these articles still carried the original Grameen Shakti theme, but extended on this to encapsulate a broader set of goals. In 2001, solar home systems were still the only marketable Grameen Shakti product (Barua 2001, p.205), however, complementary to this there appeared a new focus on poverty, women, employment and education. “Renewable energy can also bring considerable improvement in rural life through income generation and thus alleviating poverty. In addition, it can bring multiple positive results in terms of women's welfare, children's education, employment and income generation” (Barua 2001, p.206). At this time, women were mentioned but not specifically targeted, as they would be later.

Grameen Shakti has experimented with or expressed interest in various other energy technologies over the years, such as irrigation, wind and forestry based products. Only two of these, however, have been rolled-out across Bangladesh: the biogas plants and the improved cook stoves.[55] In 2005 and 2006 respectively, biogas plants and improved cook stoves began to be sold as standard Grameen Shakti products at the

[55] Energy technology for irrigation has been mentioned as a future project for several years by Grameen Shakti (Barua 2010) with little progress at the time of field research by the author. In 2012 though, a new solar irrigation project with IDCOL was being trialled. Wind and forestry projects have not progressed beyond the pilot stage (see note 62).

rural branches. Grameen Shakti's promotional booklets from 2006 onwards introduced biogas plants and improved cook stoves as promising cooking energy technologies (Barua 2007, pp. 1, 5, 10-11). Correspondingly, the Grameen Shakti mission objectives, as described in their promotional material and publications, became more complex. Firstly, the publications no longer focused simply on the development of lighting and electricity for small appliances, as enabled by the solar home systems, but now also focused on the importance of better cooking techniques, with the biogas plants and improved cook stoves. In this way, women began to be mentioned as direct beneficiaries of Grameen Shakti activities, as it was recognised that it is women who primarily suffer from the use of traditional cooking equipment (Barua 2009, January 13).

Furthermore, just prior to the roll-out of the new technologies, Grameen Shakti began to focus more explicitly on female empowerment with the construction of 'Grameen Technology Centers' (GTC). All of the Grameen Technology Centers are run and directed by teams of female engineers. The engineers perform a variety of tasks, with one of the main tasks being to oversee the solar appliance construction, along with training of customers and staff in the assembly and functioning of the technologies. The GTC staff are instructed to hire and train local disadvantaged women on how to construct solar light-hoods and circuits *etc.* These local women then, according to Grameen Shakti, become "social entrepreneurs" in their own right, earning an income as Grameen Shakti contracted "solar technicians" (Barua 2007, p.8). Finally, it was also in the mid-2000s that Grameen Shakti's publications began to advertise its 'poverty alleviation' credentials, by directly targeting poorer households with the introduction of pro-poor options. These pro-poor options include micro-utility (shared-cost models) and mini solar panels, which will be explored in section 4.4.1.4 and section 6.4.3.

In sum, by the late-2000s, Grameen Shakti's publications and speeches had developed a strong sense of mission. Its primary goal remains the dissemination of renewable energy technologies to rural households, with the addition of cooking technologies to its repertoire (Barua 2009, January 13). Its secondary goals involve action on rural

employment and income generation, strategies to enable poorer households to afford its technologies, and measures to enhance female empowerment.

This elucidation of the various elements in Grameen Shakti's social mission will prove helpful in the following chapters, where we will assess Grameen Shakti's actions against its own objectives and explore how it balances these social goals with its financial goal of creating a successful social business. Firstly though, in order to gain a greater understanding of Grameen Shakti's activities and its possible contribution to rural Bangladeshis, the final section of this chapter will provide more detailed information about Grameen Shakti's three energy technologies, including their components, operation and cost.[56]

4.4 Grameen Shakti's products

4.4.1 Solar home systems (SHS)

4.4.1.1 Purpose

The solar home system is designed to produce solar-powered electricity for rural households and small businesses. This electricity is primarily used for lighting and charging or running of small appliances within the home or business.

4.4.1.2 Components

Solar home systems generally consist of a solar panel, battery, charge controller and circuitry for several lights/lamps and other appliances (Ahammed and Taufiq 2008, p.95) (see figures 4.4 and 4.5). The packages sold by Grameen Shakti include these components along with the recommended number of lamps (see table 4.1 below). Other accessories, such as mobile phone rechargers and DC-DC converters, can also be purchased from Grameen Shakti.

[56] The information provided in section 4.4 is largely drawn from the Grameen Shakti website (www.gshakti.org) and from field work interviews and observations in Bangladesh in 2008-2009 (as described in chapter five).

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Figures 4.4 and 4.5: Grameen Shakti solar home system. A small solar home system panel on a customer's roof (left); a customer standing next to the charge controller above and the battery below (right). Note: Photos from author, permission granted for publication by customer pictured, Bangladesh village 2008.

The solar panels are currently imported from Japan though there are plans for the panels to begin being made in Bangladesh by local companies (Kamal 2010, p.18; Nahar 2011, January 21). The batteries are made by Rahimafrooz, a Bangladeshi company, and other components such as lamps, charge controllers are sourced from local suppliers in Bangladesh (Kamal 2010, p.18). These components are purchased and distributed by the Grameen Shakti Head Office to the divisional and branch offices. The lamps, circuits and accessories are then assembled by GTC engineers and trained local staff (Kamal 2010, p.18) (see figure 4.6 below).

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Figure 4.6: A Grameen Technology Center technician soldering a lamp circuit. Source: Photos from author, permission granted for publication by staff member pictured, Bangladesh village 2008.

4.4.1.3 Installation and Operation

Figure 4.7: Transportation of a solar panel and components from branch office to customer for installation. Source: Photos from author, permission granted for publication by staff members pictured, Bangladesh village 2008.

The solar panel and equipment are transported from the Grameen Shakti branch office to the customer's home (see figure 4.7 above). The solar panel is attached to the roof at a 23 degree angle with the ground, south facing, and clear of all obstructions (Ahammed and Taufiq 2008, p.95). It normally takes two Grameen Shakti branch staff two to three hours to fully install the SHS. Once installed, the solar panel converts sunlight into DC electric current which is then stored in the battery inside the house. It is regulated by the charge controller, which is usually installed at head height above the battery (see figure 4.6 above). The charge controller is then connected to appliances and several ceiling lights which are installed around the house.

According to Grameen Shakti staff and brochures, the solar panel supplies enough charge for approximately four hours of continual use daily (Grameen Shakti 2010a). The size of the panel determines the number of lamps and/or accessories that it can supply (see table 4.1 below). It also determines the cost.

Table 4.1: Load and price of Grameen Shakti Solar Home System packages, as of December 2010 (Grameen Shakti 2010a).

4.4.1.4 Cost

As seen above, there are various sizes of solar panels and thus various 'packages' available to Grameen Shakti clients. For example, a customer can choose from a 10Watt system for 8,800Taka (~US$125), up to a 130Watt system for 65,400Taka (~US$935) (see table 4.1 above). In order to pay for the chosen system, Grameen Shakti has several financing options (see table 4.2 below). The customer can choose to pay the full amount at the time of purchase, or pay in monthly instalments with 15-25% initially deposited (*i.e.* down-payment) and a 4-6%*p.a.* "service charge" (*i.e.* flat interest rate) on the remainder. There is also a "pro-poor" option advertised by Grameen Shakti, called micro-utility, where the customer pays 10% of the total price as down-payment and the remaining 90% of the loan amount is to be repaid in 42 instalments, with no service charge (*i.e.* zero interest) (Grameen Shakti 2010b).

Table 4.2: Payment options for Grameen Shakti SHS customers, as of December 2010 (Grameen Shakti 2010b).

4.4.2 Biogas Plants

4.4.2.1 Purpose

The biogas plant is designed to produce methane gas from the decomposition of animal waste, primarily for cooking purposes in rural homes or small commercial farms. The gas produced from larger biogas plants may also be used to produce electricity. The decomposed waste matter, called slurry, can be used a fertiliser.

4.4.2.2 Components

Figures 4.8 and 4.9: Grameen Shakti biogas plant. Biogas plant input chamber (left); gas stove-top using biogas plant methane gas (right). Source: Photos from author, permission granted for publication by customer, Bangladesh village, 2008.

The biogas plants consist of: an input chamber, for deposit of the cow or chicken dung; a digester chamber, located underground, which converts the dung into gas; and an output chamber, for the leftover slurry (see figures 4.8 and 4.10). The system also requires piping to conduct the methane gas to the gas stove-top, which is usually located in an indoor or outdoor sheltered kitchen (see figure 4.9 above). The biogas

plants come in several sizes, as a measure of the capacity of the digester chamber and thus amount of gas produced. The sizes are 1.6m^3, 2.0m^3, 2.4m^3, 3.2m^3 and 4.8 m^3 gas production capacity (IDCOL 2010a). Larger sized biogas plants are also offered by Grameen Shakti if specifically requested by the customer.

4.4.2.3 Installation and Operation

Figure 4.10: A Grameen Shakti branch diagram of a biogas plant. Source: Photo from author, permission granted for publication by staff member pictured, Bangladesh village 2009.

Construction of the chambers is a technical operation, which requires the skill of a local mason. The Grameen Shakti branch staff supervise the construction, coordinate with the mason, and supply gas piping and some of the gas stove components. The customer supplies the labour for digging the holes *etc* and obtains the cement and/or bricks. As Bangladesh has local cement and bricks manufacturing industries, it is usually possible to obtain local materials for the biogas plants. The construction requires time for pre-planning, especially of the site location, and then takes two to five weeks to construct (IDCOL and SNV 2006, p.51).

After construction, manure from cows or chickens is shovelled and mixed into the small well of the input chamber. The mixed material then naturally decomposes in the main underground chambers over a number of weeks, to produce methane gas (which is piped to a gas stove top). In order for the biogas plant to produce a daily supply of gas, the owner must regularly input the manure of approximately three cows or 200 chickens (IDCOL and SNV 2006, p.ii). The exact amount of dung required, and hence

gas produced for cooking, is dependent on the size of the biogas plant digester chamber (see table 4.3 below).

After the original material has been sufficiently broken down and the gas extracted, it enters the final chamber which has an outlet to allow the resulting slurry to be collected. This slurry is advertised by Grameen Shakti as a superior organic fertiliser. "Gas produced through these plants is used for cooking purposes and lighting of rural households. In addition, the slurry, by-product of biogas plants, being a very good organic fertilizer is used to maintain soil fertility and increase crop production" (IDCOL 2010a).

Table 4.3: Capacity and price of Grameen Shakti biogas plants, as of December 2010 (Grameen Shakti 2010a).

4.4.2.4 Cost

The customer pays for the cement/bricks, the local mason and any local labour, along with paying Grameen Shakti for supervision of construction and for maintenance of the biogas plant. This cost is somewhat reduced by the 9000Tk cash subsidy from the NDBM Programme. The official Grameen Shakti 'loan package' involves the customer paying 25% of the total cost initially, and the remainder in monthly instalments over 2 years, with 8%*p.a.* flat rate interest (Grameen Shakti 2010c). The total biogas plant price, then, is between 20,000 and 40,000 Taka (~US$285-US$570), plus the cost of acquiring chickens or cows (if not already owned).

4.4.3 Improved cook stoves (ICS)

4.4.3.1 Purpose

The improved cook stove (ICS) is designed to burn biomass materials (wood *etc*), to produce heat for cooking in rural homes or small businesses.

4.4.3.2 Components

Figures 4.11 and 4.12: Grameen Shakti improved cook stove. An improved cook stove in use (left); a decorated improved cook stove (right). Source: Photos from author, permission granted for publication by customer pictured, Bangladesh village 2008.

Grameen Shakti's original improved cook stoves are simple clay-made stoves, with one to three 'ovens' and a cement chimney for removal of smoke (see figures 4.11 and 4.12). They also have a small cap on the chimney top to keep rain and debris out, and metal grates to support the cooking pots. The improved cook stove design was modelled on one of the BCSIR cook stove patterns and adapted for use by GTZ and Grameen Shakti (see figure 4.13 and section 6.5.2). Since 2010 the ICS have been made entirely of cement rather than clay or mud (see below).

4.4.3.3 Installation and Operation

Originally, the ICS construction labour and local clay were supplied by the customer. Grameen Shakti branch staff supplied the metal grate and cement chimney, and supervised the construction of the ICS. Originally, only the chimneys were made in bulk by a local mason for Grameen Shakti. As noted above, since 2010 the ICS have been made entirely out of cement (Kamal 2011, March 24), constructed in bulk by Grameen

Shakti masonry contractors. While the original ICS took several days construction, the new ICS are installed relatively quickly, in several hours.

Figure 4.13: A Grameen Shakti branch diagram of an improved cook stove. Source: Photos from author, permission granted for publication by staff member pictured, Bangladesh village 2009.

In both old and new stoves, the stove openings are made to a specific size, in order to tightly fit the standard Bangladeshi cooking pot and minimise heat loss. The stove base has an opening for the user to feed in wood *etc.* The shape of the stove is designed to maximise the amount of heat being generated which is used to cook the food in the pot on top of the stove. The chimney is designed to remove all smoke out of the kitchen. The ICS, then, is designed to cook meals faster, with less fuel, and less smoke.

4.4.3.4 Cost

Originally, the customer paid Grameen Shakti 700-1000 Taka (~US$10-US$14) for the ICS's chimney, grates and supervision of construction (the price depending on the number of ovens desired and local conditions). The customer was also required to purchase or collect their own clay. Under the original funding project with GTZ, the customer had the option to pay half of this cost upfront and the second half in six months time. Under the new funding arrangements, the customer receives a CDM carbon offset payment for purchasing and using their ICS. At the time of sale, the customer automatically transfers this payment to Grameen Shakti, in exchange for Grameen Shakti factoring this payment into the price of the ICS.[57]

[57] The dollar value associated with the CDM for the ICS is confidential. In reply to my enquiry as to "the payment that Grameen Shakti receives from JP Morgan for each ICS sold", the Grameen Shakti CEO

4.5 Conclusion

The information provided in this chapter sought to provide the background needed for an assessment of Grameen Shakti's contribution to energy development in Bangladesh. The section on Grameen Shakti's mission objectives, in particular, will help to establish a baseline for evaluating Grameen Shakti's activities (the methodology of which will be outlined in chapter five). This overview of what Grameen Shakti believes its social mission *should* be, helps to reveal what it considers to be most important or most achievable in terms of energy development in Bangladesh, and how it believes that its own contribution should be measured. In chapter six we will begin to assess Grameen Shakti's activities using its mission objectives as the criteria framework. The overview of Grameen Shakti's organisational and funding structure above, along with the technical specifications of its energy technologies, will help to clarify the findings presented in chapters six and seven.

answered: "According to the codes of the conduct, we are not allowed to discuss the above queries" (Kamal 2011, March 24).

Chapter 5 – Case study methodology

5.1 Introduction

With a review of the social enterprise literature in chapter two, an exploration of Bangladesh's energy sector in chapter three, and an introduction to Grameen Shakti in chapter four, the thesis has attempted to build the foundations for the case study analysis. In the following chapters, the thesis will use data gathered during field research to assess Grameen Shakti's ability to address rural energy development in Bangladesh. Before doing so, though, it is necessary to explain the processes involved in the researching, sourcing and scrutinising of information concerning the case study. This chapter, then, will overview the methodologies involved in both the data collection and the data analysis components of the study, including an examination of the limitations and ethical considerations involved with the field work. It will conclude by constructing an evaluation framework, which will be used in the following chapter to conduct the initial analysis of Grameen Shakti's successes and difficulties in addressing the energy needs of rural people in Bangladesh.

5.2 Data collection methodology

Qualitative and quantitative data concerning Grameen Shakti's activities were derived from a range of primary and secondary sources. Background information was collected from Grameen Shakti's own online resources, media articles written by Grameen Shakti staff, academic papers, and reports by the World Bank and other donors. These sources were used to aid and support the field research conducted by the author in Bangladesh during an internship with Grameen in 2008-2009, which formed the research core of the thesis.

The field research was focused on obtaining data concerning the operations, potential impacts and limitations of Grameen Shakti as a social enterprise. It was partly funded

by the University of Adelaide's 'Research Abroad Travel Scholarship' and the 'School of History and Politics'. The data collected during the field research was primarily composed of statistical information and interview material from a variety of sources. Follow-up information, after completion of the field research, was obtained via correspondence with Grameen Shakti's upper management and through monitoring of the Grameen Shakti website. As will be explored in chapter six, this would prove to be essential in identifying and explaining a substantial change in product sales during 2010. The following sections will now describe, in more detail, the data collection methodology, including the restrictions, confounding factors and ethical dimensions of the field research.

5.2.1 Field research overview

The majority of data used in this thesis were collected during a three month period of field research in Bangladesh, from 5th November 2008 to 18th January 2009. Data collection during this period consisted of: interviews with senior staff in the Head Office of Grameen Shakti, and with external financial supporters; field interviews with Grameen Shakti branch staff, customers and non-customers; interviews and tours of several other Grameen organisations (see below); and, collection of statistical information from Grameen Shakti's in-house records, its financial supporters and the 'Bangladesh Bureau of Statistics' libraries. The research was based in Dhaka, at the Grameen Shakti Head Office, with regular trips to rural areas (see figure 5.1 below).

Information concerning several other Grameen organisations was also acquired during this time. Interviews with senior management in Grameen Danone, Grameen Bank, Grameen Eye Hospital, Grameen Knitwear and Grameen Shikkha were conducted. This was followed by, or in conjunction to a field day-trip to: the Grameen Danone factory; several Grameen Bank branches and group meetings; the Grameen Eye Hospital facilities; the Grameen Knitwear factory in the 'Dhaka Export Processing Zone'; and a Grameen Shikkha primary school in outer Dhaka. While these were relatively short visits in comparison to the field analysis of Grameen Shakti activities, these field trips

and interviews of diverse Grameen organisations were sufficient for comparative analyses (in sections 2.4.1 and 7.4).

Figure 5.1: Map of Bangladesh- Areas visited during field research Nov 2008 to Jan 2009. Source: Map from Grameen Shakti (2008).

The following sections will detail the information gained from interviews with various actors in connection with Grameen Shakti, and statistical information obtained from various sources. Due to limitations listed in section 5.2.4, surveys were not used to collect quantitative or qualitative data concerning Grameen Shakti. Interviews with Grameen Shakti staff (including management) were used to probe the most significant questions, and the interviews with customers, and other observations, were used to identify any inconsistencies. All interviews helped to give context to the statistical data obtained. The combination of statistical information, interviews and observations drew out a number of key points which will be presented and analysed in the following chapters.

5.2.2 Statistical data collection

Statistical information was collected from a variety of sources in Bangladesh, primarily: Grameen Shakti's database; financial supporters' databases (specifically, IDCOL and GTZ); and the Bangladesh Bureau of Statistics libraries. The statistical data obtained from Grameen Shakti consisted of information on the sale of products over time and over different Bangladeshi districts. Total product sales data, for example, were obtained for the years 1997 to 2008. This was later supplemented with Grameen Shakti website figures for the years 2009 and 2010. In the following chapters, this chronological data will enable a comparative analysis between the sale figures for Grameen Shakti's different products over the years. For one year in particular, the year 2008, more detailed data were obtained from Grameen Shakti. Specifically, this included a break-down of the sales figures for each of Grameen Shakti's field branches over that year. These 75 branches were grouped into their respective districts, and the sales figures calculated for a monthly average (see Appendix A, table A.1). This district-wise sales data will help, in the following chapters, to quantitatively gauge the extent to which Grameen Shakti's technologies have been disseminated in different regions of Bangladesh.

The statistical data obtained from the international funder GTZ consisted of information on the sale of improved cook stoves by all Partner Organisations (including Grameen Shakti), over the year 2008. The statistical data obtained from IDCOL consisted of information on the sale of solar home systems and biogas plants by all Partner Organisations (including Grameen Shakti), over the year 2008. This was updated with more recent data, up to 2010, from the IDCOL website. The data from both agencies will enable a comparison between Grameen Shakti's sales and those of other Partner Organisations.

Statistical information was also obtained from the Bangladeshi Bureau of Statistics libraries in Dhaka. In particular, the *Statistical Yearbook of Bangladesh 2007* (BBS 2008), the *Report on Sample of Vital Registration System, 2005-2006* (BBS 2007), the *Census of Bangladesh 2001* (BBS 2001), and the *Labourers Statistics Book 2003* (BBS

2003) were the most useful in gaining information concerning the composition of the different Bangladeshi districts (see Appendix A, tables A.2, A.3, A.4). This included socio-economic information, such as literacy rate, income levels, electrification, and cattle ownership. Also gathered from the *Statistical Yearbook* was information concerning the presence of Grameen Bank branches in different districts (BBS 2008, pp.401-402). This information, concerning district characteristics, will be used to conduct statistical comparisons between the districts with high and low product sales. This will enable us to ask questions such as: Did districts with higher levels of wealth, or lower levels of electricity access, have higher sales of Grameen Shakti products? Statistical analysis of questions such as this, using techniques such as multivariate linear regression and t-test comparisons, will aid in our attempt to uncover which districts and people are most in need of, interested in and/or targeted by Grameen Shakti (see Appendix B for the statistical data analysis details).

5.2.3 Interviews

5.2.3.1 Interviews with Grameen Shakti management and staff

Interviews with senior level and branch level Grameen Shakti staff were conducted by the author from November 2008 to January 2009. The interviews used an open format, with a list of questions to guide the conversation, but not constrain it (see Appendix C for a list of leading questions). Hand written notes were used to record the interview, as initial observations and interaction with personnel in the Grameen Head Office indicated that the conversation would be more open and frank without the use of a tape recorder. The interviewees were given the option to stay anonymous, or to remove their name from particular comments or quotes. All interviews with staff in the Head Office were conducted in individual offices, of their choice, without the presence of other staff members. As the senior Grameen Shakti staff were proficient in English, an interpreter was not required. For interviews with staff outside of Dhaka, an interpreter was necessary at times (see sections below for further analysis of the consequences of this).

In the Grameen Head Office, interviews were conducted with Mr Dipal C. Barua (Managing Director), Mr Abser Kamal (General Manager), Mr Md. Fazley Rabbi (senior management), Dr M. S. Islam (Head of Department of International Cooperation and Development), Mr Bikesh Kumar Des (Head of Finance and Accounts), among others (anonymous). Interviews were also conducted with senior and junior Grameen Shakti staff located outside of Dhaka. Grameen Shakti branch managers and staff were interviewed at Kalihati, Singair, Phulpur, Mowna, Bogra, Barguna, Porirkhal, Mehendiganj, Sherpur, Haluaghat and Rairtobok Grameen Shakti branches, and at Grameen Technology Centers in Singair, Phulpur, Mowna and Barguna. Also interviewed were managers and staff at the Grameen Bank branches of Kalihati, Phulpur, Bogra and Barguna. See figure 5.1 above for the location of these areas in Bangladesh.

5.2.3.2 Interviews with financial and technical supporters

In conjunction to interviews with Grameen staff, several funders and experts were interviewed in Dhaka over December 2008 and January 2009. In order to gain an understanding of the position of the funding organisations, senior management from IDCOL and GTZ were interviewed, including Mr S. M. Formanul Islam, the 'Director (Legal) and Company Secretary' of IDCOL, and Mr Erich Otto Gomm, the 'Programme Coordinator' for GTZ. A Research Associate from the RERC ('Renewable Energy Research Centre') at the University of Dhaka, Mr Himangshu Ranjan Ghosh, was also interviewed to gain expert advice on the use of solar power in Bangladesh.

5.2.3.3 Interviews with Grameen Shakti customers and other villagers

The interviews with Grameen Shakti customers (and other villagers) followed a similar open interview format, with a list of questions used to guide, but not restrict, the conversation. Open format interviews have been shown to be more effective, especially for participants with lower literacy levels, than extensive written questionnaires and surveys (see Chambers 1994, pp.956-957, 959). This less formal format also allowed the participants more opportunity to omit questions which made them uncomfortable (see section 5.3.3). As it transpired, circumstances dictated that Grameen Shakti staff were often present during the interviews, hence the interviews

were necessarily limited in scope, as attempting to collect quantitative surveyed data may have been compromised (see section 5.3.2). In sum, the open interview format was considered optimal for the interviews with Bangladeshi villagers. Interviews were held at the customer's residence, and included a demonstration of the particular Grameen Shakti energy technology which had been purchased. A range of customers, with solar home system, biogas plant or improved cook stoves products, were interviewed in villages nearby the Kalihati, Singair, Phulpur, Mowna, Bogra, Barguna, Porirkhal, Mehendiganj, Sherpur, Haluaghat and Rairtobok Grameen Shakti branches.

Along with Grameen Shakti customers, opportunities also arose to interview Grameen Bank members at several Grameen Bank branches, including those in Kalihati, Phulpur, Bogra and Barguna. These interviews were conducted with groups of approximately twenty women, during their regular Grameen Bank meetings. While Grameen staff were present here also, the size and character of the groups meant that several women appeared to speak candidly about their opinions concerning their energy issues. There also arose several opportunities to interview people who had received energy technologies from non-Grameen sources. This will later prove useful in comparing Grameen Shakti with other development projects involved in energy development in Bangladesh.

5.2.4 Limitations in the data collection

As explored in section 1.4.1, an 'everyday IPE' analysis of a meso-level actor such as Grameen Shakti will require a multi-pronged approach, exploring the relationships between international, national and local actors, and the power struggles therein. As Grameen Shakti is attempting to address the energy needs of rural Bangladeshis, then, particular attention needs to be paid to the energy development politics at these various levels. Whilst attempts were made to consider each of these aspects in an 'everyday IPE' analysis, primary research into all facets was not possible for the author. That is, being a solitary researcher with limited budget and time had significant impact on my ability to acquire comprehensive interviews and observations. As explored in further detail below, these constraints were compounded by the author's lack of fluent

Bangla language skills, and the need for Grameen Shakti's cooperation to locate and access branches and customers. As the primary task of the thesis is to identify some of the potentials and limitations of the organisation itself, it was decided that the primary research should focus on Grameen Shakti's staff, managers and customers, with secondary sources, concerning socio-economic data, the politics of energy development *etc*, used to complement this research.

Whilst in Bangladesh, the author was an intern with the 'International Program Department' of Grameen Bank. The Grameen Bank internship program facilitates a range of international researchers and students, with the primary aim to introduce them to Grameen Bank's operations and its various 'sister' social businesses, such as Grameen Shakti. Since the Head Offices of many of the Grameen social businesses are located within the Grameen Bank building, this proved to be a conveniently located research base. As Grameen was aware that I intended to study Grameen Shakti, I was appointed both Grameen Bank and Grameen Shakti supervisors, Mr Humanshu and Mr Rabbi respectively. It was with the cooperation of both these supervisors, and their respective managers, that the multiple field visits to rural Grameen Shakti branches were organised. For the majority, I was accommodated at Grameen Bank branches in rural villages nearby to Grameen Shakti branches. This, fortuitously, enabled an analysis of both Grameen Bank and Grameen Shakti operations, and how they interacted in the field.

Being an intern with Grameen was the source of both great benefit, and potential bias. As it was an unpaid internship, this reduces any perceived conflicts of interest. However, since much of the field research was coordinated by Grameen, as detailed below, there arise a series of concerns that must be addressed.

5.2.4.1 Branch selection

In terms of branch selection, Grameen accommodated my request to independently choose which Grameen Shakti branches to visit. I was also afforded the opportunity to visit branches which were located nearby the branches chosen, and to accompany other researchers on excursions to various Grameen Bank branches. The Grameen

Shakti branches selected for the field research were chosen randomly, but with some restrictions to ensure that these branches represented a range of circumstances. This included the more established branches near Phulpur; new branches near Mehendiganj; very remote branches near Barguna; branches closer to Dhaka near Singair; and branches near Porirkhal where cyclone Sider had disrupted normal energy supplies. Some branches appeared to be quite successful and large, while others were somewhat small and struggling. There were plans for a final field visit to the south-east of the country, to gain a more substantial geographic spread of branches, but this was unfortunately cancelled due to illness. Regardless, the variety of branches visited was sufficient to gain a broad appreciation of where Grameen Shakti operated, and the range of circumstances it operated under.

5.2.4.2 Customer interviews

In terms of the customer interviews, including how the interviewees were chosen and how the interviews proceeded, the confounding factors were more acute. Firstly, while I had independent control over which Grameen Shakti branches were visited, there was little way to choose which customers to interview. As an outsider, I was not familiar with which villages or households had purchased Grameen Shakti products and thus, for the majority, was reliant on the knowledge of the local Grameen Shakti staff. This was both a positive and a negative situation in terms of acquiring information. For example, when I requested that a variety of villages and households be contacted (from richer, poorer, centralised and remote areas) most branch staff endeavoured to fulfil this request.

In some Grameen Shakti branches the accompanying staff member was a fairly junior employee, which resulted in less formalised field visits and more relaxed, open and informative interviews with both the customers and the staff. Alternatively, in branches where senior managers accompanied me, the interviews were generally more formal and the customer appeared less comfortable and responsive. While the observations were still useful during these visits, the interview material itself was deemed compromised (see the 'Ethical considerations' section below). In each village, however, there also appeared to be exceptions to the rule, with customers, staff and

non-customers who appeared to be frank and open in affording me their opinions regardless of the circumstances.

5.2.4.3 Language barriers

While my lack of fluent Bangla was not an impediment to interviews conducted in Dhaka, it did arise as a problem when visiting rural areas. On each field visit I was accompanied by either an interpreter or another Grameen Shakti intern (who was fluent in both Bangla and English). The interpreters were contracted via Grameen Bank. While the original intention had been to hire an interpreter unconnected to Grameen, the organisation was insistent on my using an interpreter who had been interviewed and vetted by then. The reasoning behind this concerned Grameen Bank having a responsibility for their interns' safety, as they travelled across Bangladesh, and thus wishing to ensure that the interpreter was a trustworthy escort. These interpreters are contractors, rather than employees of Grameen, and are paid directly by the intern they accompany. While the relationship between Grameen and the interpreters was a source of potential bias, the two interpreters who accompanied me, on different occasions, were forthright (and seemingly sincere) in claiming their independence from Grameen. Regardless, this potential source of bias was a factor considered by the author at every stage of analysis.

Due to the limitations stated above, it cannot be assured that the information obtained in the village interviews was from a sufficiently representative sample of customers, who were unimpeded in their answers. Thus, as stated above, the interview material was not used in any quantitative or survey-based analysis. Instead, the customer interviews were used to highlight any inconsistencies with Grameen publications, managerial interviews and national statistics. They were also informative in providing the author with a better knowledge of the operation of the technologies. The field visits were also essential in terms of understanding and comparing the attitudes of staff and managers, in both Grameen Shakti and Grameen Bank branches. And finally, the field visits afforded a greater appreciation of the difficulties involved in travelling to some of the most remote regions in Bangladesh, and the consequences this has had on energy infrastructure. While being an intern with Grameen was a

source of potential bias, Grameen's aid in travelling to these areas, gaining access to the branch offices, identifying and contacting customers, and accessing their internal databases, was invaluable.

In sum, the methods employed in the field research were sufficient for the task of analysing Grameen Shakti's activities in Bangladesh. The combined quantitative and qualitative information collected during the field trip was useful for revealing several underlying trends concerning Grameen Shakti's operations and motives, taking into account potential biases and confounding factors. The full impact of Grameen Shakti on the energy needs of households may still require more primary data acquisition,[58] but analysis of the social enterprise itself was satisfactorily completed with the field research detailed above.

5.2.5 Ethical considerations

Prior to commencement of the field research in Bangladesh, ethics clearance (as appropriate) was applied for and gained. The ethics clearance application was submitted in September 2008 to the University of Adelaide's 'Human Research Ethics Committee', and approved in October 2008. The application was prepared in accordance to the requirements of the *National Statement on Ethical Conduct in Human Research* (NHMRC 2007). The ethical considerations, especially in regards to personal interviews, are listed in detail in these documents.[59]

While every effort was made to follow these ethics guidelines, invariably circumstances do not always allow for this and real-time adjustments must be made. For this thesis, an unforeseen ethical consideration occurred in relation to the presence of Grameen staff at customer interviews. The original intention was to

[58] Primary data acquisition of the socio-economic statistics would also enable a more detailed analysis of Grameen Shakti's activities. The socio-economic statistics used in this thesis were collected from Census publications *etc*, which are useful, but necessarily restricted to district-wise, aggregate data sets.

[59] For a copy of these, please contact the author or the Human Research Ethics Committee at the University of Adelaide. The original title of the project for review was: *Technology Dissemination via Microfinance: Grameen Shakti in Bangladesh.*

ensure that interviews with Grameen Shakti customers were conducted with only the author and the interpreter present. This was to assure the interviewee of anonymity, and to ensure that they did not feel intimidated or uncomfortable by the presence of Grameen Shakti staff. Unfortunately, this was not possible. Firstly, I came to understand that it would have been considered socially inappropriate to ask a Grameen staff member to leave; and secondly, the interpreters themselves were contractors for Grameen Shakti.

Due to these circumstances, the interviews' leading questions were more focused on the technology itself, rather than on more confronting, critical or personal questions.[60] The open format of the interviews, however, ensured that any customer who wished to voice an opinion on the technology or on Grameen Shakti was afforded the opportunity to do so. In any circumstance where the customer appeared uncomfortable, the interview was finished as quickly as socially appropriate. The data analysis methodology, therefore, is less focused on scrutinising the impact that Grameen Shakti has had on rural people's lives, but is, rather, concerned with assessing whether Grameen Shakti's approach to addressing energy development in rural Bangladesh is a real alternative, by looking at which people and what issues it has tried to address, how it has attempted to do so, and whether this has been influenced (or is influencing) more powerful actors and interests.

5.3 Data analysis methodology

5.3.1 Assessing Grameen Shakti's 'success' in addressing rural energy needs

The central research question (identified in section 1.4) called for an examination of whether Grameen Shakti can provide an effective development alternative for rural people in Bangladesh. Specifically, this requires an investigation of whether Grameen

[60] As explored above, these restrictions were in part responsible for the author needing to use both primary and secondary information sources for an analysis of power structures and conflicts in chapter eight.

Shakti's activities are adequately addressing the elements of energy development that other, more conventional actors in the Bangladeshi energy sector have thus far neglected or have inadequately addressed (see section 3.4). Grameen Shakti's choice of *which* energy activities to engage in, and how it should do so, though, will be shaped by its ideological stance concerning development and its perceived role for a social enterprise in this arena (as argued in section 3.5). This prompts us to address the research question from two directions: firstly, by assessing Grameen Shakti's activities in terms of its own aims and criteria; and secondly, by examining Grameen Shakti's actions, successes and difficulties through a political lens, which attempts to capture the missing pieces of the 'puzzle' (see section 1.3.2).

Before we can begin to assess Grameen Shakti's activities via its own criteria we need to determine how Grameen Shakti measures its success in addressing energy development in Bangladesh. To do so, we can use the social mission objectives drawn out in section 4.3, along with Grameen Shakti's promotional material, to develop an understanding of what it intends to accomplish and how it intends to judge its effectiveness in doing so. Importantly though, measuring 'success' in development is difficult, not only because rigorous measurement methods are elusive, but because the definition of success itself is still controversial (see Jain 1994, p.1375). That is, while the assessment in chapter six will be enlightening, the criteria used to evaluate Grameen Shakti's activities are not arbitrary or ideologically neutral, since they will be constructed using Grameen Shakti's own assumptions and preconceptions concerning development processes.

Thus the results, summarised in chapter seven, will tell us as much about Grameen Shakti's development ideology as they do about the social enterprise's impact on rural energy. The analysis in chapter eight will attempt to highlight some of the consequences of these finding (for Grameen Shakti's ability to address 'peripheral' energy needs) and reveal some of the influences which have shaped Grameen Shakti's approach (including both national and international sources). It is here that an 'everyday IPE' perspective can help to uncover how well Grameen Shakti has responded to the energy needs of rural Bangladeshis, and how it has been moulded

by, or acted in resistance to, dominant norms and actors. For now, though, this methodology chapter will conclude by creating an evaluation framework, which will form the basis of the following chapter's assessment of Grameen Shakti's own aims.

5.3.2 Creating a framework for evaluation

As a social enterprise, Grameen Shakti does not neatly fit into any of the traditional 'development agency' categories; it is not an NGO, an INGO, a government organization or an international aid agency. Consequently, most social enterprises do not operate within a 'development project' structure. However, while Grameen Shakti does operate differently to other development actors in certain significant ways, its primary activity (the dissemination of energy technologies) does have numerous similarities with the conventional energy project.[61] Furthermore, an analysis of Grameen Shakti's published mission objectives, and its methods of self-evaluation, reveals parallels with the World Health Organisation's (WHO) household energy technology project evaluation criteria (WHO 2008).

These circumstances allow us then, to use the WHO's evaluation framework (with some alterations) to assess Grameen Shakti's energy activities in Bangladesh. In the following, we will first briefly outline the WHO's evaluation criteria, before then comparing and contrasting these criteria with Grameen Shakti's own aims and self-assessment techniques. Finally, we will construct an evaluation framework that is specifically tailored to Grameen Shakti, which will be used in chapter six's assessment of its activities.

5.3.2.1 The WHO evaluation criteria

In 2008, the World Health Organisation produced a detailed catalogue of the approaches used by different organisations to evaluate "household energy

[61] While Grameen Shakti, as a social enterprise, also shares some similarities with a traditional business, we are interested here in assessing Grameen Shakti's ability to contribute to energy development and not its ability to be a successful economic enterprise. Interestingly, though, as we will see in the following, there are those who would consider a business dimension to be essential for a 'successful' rural energy development project.

interventions" (WHO 2008, p.3). The catalogue included, for example, the evaluation technique of "house and household monitoring" used by Practical Action and "energy policy and multi-topic household surveys" used by the World Bank (WHO 2008, p.44). While the catalogue was particularly focused on evaluation techniques for biomass-based household energy projects, the WHO's generic evaluation criteria (which it drew from this catalogue) are adaptable to most household energy projects. It is these generic evaluation criteria that will be most useful for the initial analysis of Grameen Shakti.

According to the WHO (2008, p.9), evaluation techniques for household energy projects tend to distinguish between "process" and "outcome" evaluation criteria. The process criteria generally concern the implementation of the project, including its uptake and its capacity to continue operating; it assesses "what interventions have been implemented, in how many homes, with whom, when and how" (WHO 2008, p.9). The outcome criteria, alternatively, focus more on the intended (and any additional) consequences that result from the project's implementation: it "measures the extent to which an intervention achieves the specific outcomes desired by the beneficiaries, implementers or donors" (WHO 2008, p.9).

Within these two categories, the WHO (2008, p.9) also identifies seven thematic areas of evaluation, which are specifically relevant to household energy and health interventions. In the process evaluation criteria, the thematic areas are 'adoption' and 'market development'. The 'adoption' element includes evaluation of the number of households affected by the project, whether the project reached its target audience and whether the households continue to adopt the intervention (WHO 2008, pp.11-12). The 'market development' category, for projects with a sales component, includes evaluation of market penetration, the profitability of the project, its affordability to the household and the success of promotional activities (WHO 2008, pp.13-14).

In the outcome evaluation criteria, the WHO's thematic areas are 'performance', 'pollution levels and personal exposure', 'health and safety', 'time, socio-economic and other impacts' and 'environmental impacts'. These evaluation categories represent a

variety of intended and secondary outcomes specifically for cook stove projects in the WHO report. For evaluation of more generic household energy projects, however, these categories require some restructuring (see figure 5.2). For a technology-based energy project, the categories of 'performance' and 'environmental impact' are still relevant. The other outcome evaluation areas of 'pollution levels and personal exposure', 'health and safety', 'time, socio-economic and other impacts', alternatively, are better interpreted as 'primary impacts' and 'secondary or additional impacts'. These primary and secondary impact criteria, then, depend on the specific intentions and aims of the project.

Figure 5.2: The WHO's evaluation criteria for household energy projects. Source: Adapted from the WHO's (2008, p.9) "thematic areas of evaluation".

5.3.2.2 Synergies between Grameen Shakti's objectives and the WHO energy project criteria

In section 4.3 we explored the development of Grameen Shakti's mission concerning its role in energy development in rural Bangladesh. Its primary social objective, to provide energy technologies for rural Bangladeshis, has been a central theme since its inception. Over the last several years it has also elucidated some secondary social

objectives, with a focus on rural employment and income generation, strategies to enable poorer households to afford its technologies, and measures to enhance female empowerment. The main measure of its success in accomplishing these aims has been the dissemination of the energy technologies. The positive impacts listed above are assumed to follow-on from the use of, and the sales processes associated with, the technologies. Grameen Shakti's focus, it can be argued then, has been on its ability to disseminate affordable, socially acceptable, environmentally benign and technically reliable energy products, to rural households and small businesses who are in need of better energy alternatives.

These objectives, as noted above, have synergies with the WHO's energy project criteria. The WHO's 'adoption' criterion evaluates the number and the diversity of people who are able to use, and wish to continue to use, the technology. In terms of Grameen Shakti's objectives, this could be interpreted as a measure of the dissemination rate, customer targeting, and the affordability and social sustainability of its technologies and operations (described in detail below). The WHO's modified (generic) 'outcome evaluation' criteria of 'technology performance', 'environmental outcomes', and 'primary' and 'secondary impacts', also appear to relate to Grameen Shakti's objectives of technical and environmental sustainability, and the expected primary and secondary impacts which result (described below).

The WHO's 'market development' criterion, however, is less applicable to our current analysis. Market development involves creating the supply, demand and infrastructure needed for a viable market, which can continue to expand and serve the energy requirements of a populace after the project is completed (WHO 2008, p.9). However, the inclusion of 'the market' in a set of development criteria is somewhat controversial. In an assessment of a social enterprise, in particular, we wish to separate the analysis of a technology's impact on rural energy needs, from analysis of the viability of the organisation itself. The following evaluation categories, then, will only consider market development in so far as it contributes to sustainable energy solutions for rural people, rather than assuming that a sustainable market is an intrinsic benefit in itself. Specifically, Grameen Shakti's energy development objectives

concerning the technologies' dissemination rate, affordability and social sustainability can be considered to be contributing to market development (though this is not the aim in including these criteria).

In figure 5.3, Grameen Shakti's objectives (as interpreted in the analysis above) are categorised into a framework which draws on the WHO's energy project evaluation criteria. In the following section these categories will be further detailed and explained. It is these categories which will form the basis of the evaluation of Grameen Shakti's contribution to energy development in Bangladesh, in chapter six.

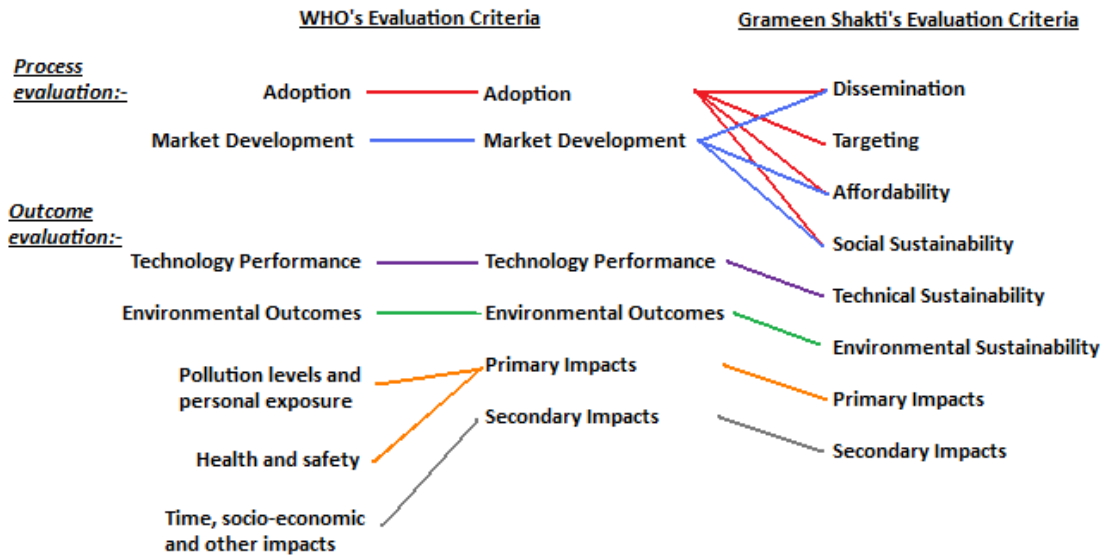

Figure 5.3: Creating evaluation criteria for Grameen Shakti's energy 'projects'. A comparison of the WHO (2008) evaluation criteria and Grameen Shakti's energy development objectives (as identified by the author).

5.3.3 Evaluation criteria

5.3.3.1 Dissemination of energy technologies

For Grameen Shakti, sales figures appear to be the primary source of evidence used to prove that the organisation and its technologies are 'succeeding'. Sales over the years are presented on Grameen Shakti's homepage, and recurringly referred to in its publications, as a quantifiable measure of its positive contribution to energy

development in Bangladesh (www.gshakti.org). In the development arena, dissemination and 'up-scaling' of an appropriate technology is often considered an essential project outcome (WHO 2008, pp.6, 13). For sales-based dissemination projects in particular, the choice by users to purchase the technology (*i.e.* to invest their own money) can indicate that the technology is indeed beneficial. That is, sales-based popularity is an easily measured, though certainly not sufficient, indicator of customer satisfaction and the breadth of 'benefit' distributed across a population. In terms of energy development, then, Grameen Shakti appears to believe that enhancing the "popularity" of its technologies is the key to success (Yunus 2010), and it uses sales figures as the primary way of judging this.

5.3.3.2 Targeting of beneficiaries

Integral to Grameen Shakti's identity is its commitment to rural Bangladesh and the delivery of its technologies to rural households and small businesses. Targeting of rural areas, with branches, staff, advertisement *etc*, then, could be considered an essential component of Grameen Shakti's energy development mission. Along with rural targets, a broader 'targeting' criterion could also judge whether the technologies are being promoted in areas in which they are most needed. For example, Grameen Shakti has published its aim to target the sale of solar home systems in districts which are least likely to receive grid electricity in the coming years (Barua 2002, p.33). Similar targeting questions could be asked of the other technologies, the biogas plant and the improved cook stove. Finally, Grameen Shakti has also, especially from the mid-2000s onwards, promoted its pro-poor credentials. Another component of this evaluation category, then, could be a measure of how well Grameen Shakti is targeting energy for the poorest. In sum, a 'targeting' category could encompass a variety of aspects, including Grameen Shakti's servicing of those in most need of the technologies, poorer households and those living in more remote, rural regions.

5.3.3.3 Affordability of the technologies

In terms of its primary mission, Grameen Shakti has also regularly focused on the affordability of its technologies. Indeed, one of the hallmarks of the Grameen family of social businesses is their rural-friendly finance strategies. Financially enabling rural

households to buy energy technologies, with small loans, is advertised as one of Grameen Shakti's "keys to success" (Grameen Shakti n.d.(d)). Affordability, however, encompasses more than just the initial cost. It also involves ongoing financial and opportunity costs, such as for repairs. That is, for a technology to positively impact energy development in Bangladesh, it needs to be affordable at a number of stages. Grameen Shakti appears to be aware of this and often advertises the savings in time and the possibilities of increased income from its technologies. Affordability, then, over the lifetime of the technology, can be considered a criterion for successful energy development delivery for Grameen Shakti.

5.3.3.4 Sustainability of the technologies

Another prominent component of Grameen Shakti's mission is its promotion of environmentally renewable technologies. One readily identifiable evaluation criterion, then, could involve assessing whether Grameen Shakti has continued to promote technologies which use and produce renewable energy. Or, more broadly, has it continued to focus on the environmental sustainability of its operations? This sustainability criterion, furthermore, could be extended to include other dimensions of sustainability, such as social sustainability and technical sustainability. Without a technology being socially and culturally appropriate, sufficiently user-friendly and technically reliable, it will not continue to be utilised, and thus cannot continue to benefit the individual or community (Sovacool and Dworkin 2012, pp.24-25). Grameen Shakti appears to include these sustainability elements in its mission, promoting the need for a range of post-sale commitments, such as maintenance and customer training. The environmental, social and technical sustainability of its technologies and operations, then, are considered important criteria for Grameen Shakti's current and future impact on energy development.[62]

[62] The use of the term 'sustainability' here, to describe social, technical and environmental sustainability, is deliberate (see section 3.2.2). Rather than focusing on the economic or financial sustainability of Grameen Shakti's sales, the focus here is on the elements required for Grameen Shakti's activities to have lasting environmental and social benefits. While Grameen Shakti is certainly interested in the financial sustainability of its operations, its business goals are not what are being measured here (see section 5.3.2.2).

5.3.3.5 Positive impact on beneficiaries

Finally, implicit in the above criteria is Grameen Shakti's aim to positively impact the lives of individuals, households and communities in Bangladesh. This includes reducing the reliance of the rural population (particularly women) on unsafe, polluting traditional energy sources and improving their rural economic situations. For homes with a solar home system, this can be measured in the number of hours of lighting and electrical charge a household gains. For those with biogas plants, we can measure the amount of cooking gas and organic fertiliser produced, and the smoke and fuelwood saved. Similarly, for those with improved cook stoves, we can measure the savings in smoke, fuelwood and time. In conjunction to these primary benefits, Grameen Shakti has a number of secondary impact objectives which result from both the technologies themselves and Grameen Shakti's delivery processes. These include the employment of local people in the delivery chain, and the potential for the technologies (and the process of distribution) to empower women.[63]

5.4 Conclusion

In the following chapter, the evaluation categories created here will be used to explore and assess Grameen Shakti's activities. The analysis will draw, primarily, from the field research detailed above. It will include both quantitative statistical analysis based on data acquired from Grameen Shakti and other sources, and qualitative analysis based on observations and interviews in the field. Despite the limitations in the field research, described above, the information acquired is sufficient for revealing significant findings concerning Grameen Shakti's priorities and its ability to address the energy needs of rural Bangladeshis. These findings will be useful, in later chapters, for exploring the more complex intricacies of Grameen Shakti's choices concerning its energy objectives, and for analysing how these goals and its own 'measures of success' are not apolitical, but are influenced by a range of actors and factors in Bangladesh.

[63] The 'impacts' stated here are those which the author found Grameen Shakti to focus on most. See section 7.4 for a critical analysis of the strengths and weaknesses of Grameen Shakti's 'measures of success'.

Chapter 6 – Data analysis:

Assessing Grameen Shakti's ability to address rural energy needs

6.1 Introduction

The evaluation framework established in chapter five will be used in this chapter to conduct a primary assessment of Grameen Shakti's ability to address its own energy development targets. The chapter will explore, specifically: the dissemination of Grameen Shakti's technologies throughout Bangladesh; 'who' is most successfully targeted; whether Grameen Shakti has made these technologies sufficiently affordable and sustainable; and if Grameen Shakti's activities have resulted in the positive impact that it hopes to create in rural Bangladesh. The chapter will do so by examining the evaluation criteria in consecutive sections, under the category headings of: technology dissemination, targeting, affordability, sustainability, primary impacts and additional impacts. The analysis in the first two categories, 'technology dissemination' and 'targeting', will utilise the statistical data obtained during field research, while the analysis in remaining categories will draw from observations and interviews in the field. We will find a variety of interesting outcomes and several inconsistencies, which will need further analysis in the following chapter.

6.2 Technology dissemination

As noted in section 5.3.3.1, Grameen Shakti and its funders appear to use the purchase of its technologies as a primary measure of success or failure (Barua 2010; IDCOL 2010a). Dissemination of a technology by sales is a potentially powerful measure of the extensiveness of the impact on, and satisfaction of, the user. That is, we can assess the number of households which may be benefiting from the technologies by the

number of items sold, and we can judge whether the technology has proven popular (though not 'why') by looking at whether the sales have increased over time.

This simple measure of sales can be assessed with relevant statistical data. However, to explore and explain the trends that will be found below will require more in-depth analysis and reference to field observations and interviews. For now though, let us firstly compare the expected sales figures for each technology with the actual number sold, over the years. In order to gain some perspective on these values, the analysis below will also compare Grameen Shakti's sales with those of other Partner Organisations (POs) under similar funding arrangements. And finally, we will compare the sales of the technologies against each other.

6.2.1 Solar home system sales over time

With approximately 60% of the rural population of Bangladesh lacking access to grid electricity, Grameen Shakti has the potential to make a significant difference to the electric energy needs of millions of Bangladeshi homes (World Bank 2013). Thus Grameen Shakti has judged its success, over the years, primarily in terms of the number of solar home systems (SHS) it has sold to rural homes and small businesses. Put simply, the more broadly it disseminates its solar home systems, the more people it can potentially benefit.

Grameen Shakti began as a pilot project in 1995, with the aim of selling 20, and then 100, solar home systems (Yunus 2010). The pilot was a success, and Grameen Shakti has been exponentially increasing its SHS sales since then (see figure 6.1 below). When the 'Rural Electrification and Renewable Energy Development' project (REREDP) began its financial assistance to Grameen Shakti and other POs, in 2003, its initial target was 50,000 SHS by the end of June 2008 (IDCOL 2010b). This target was reached three years ahead of schedule, in September 2005, primarily due to the sales by Grameen Shakti (Barua 2007, p.1). IDCOL (2010b) revised its target to 200,000 SHS by the year 2009 with additional assistance from the RERED project, which was again reached ahead of schedule. In 2007, Barua (2007, p.1) publicised that Grameen Shakti could

reach one million sales by 2015. By 2010, Yunus (2010) was predicting that one millions sales would be reached by 2013. At a sales rate of approximately 20,000 SHS sales per month, this is entirely feasible.[64] In summary, Grameen Shakti's sale of SHS has outperformed both its own and its funders expectations. It has also done considerably better than other Partner Organisations in the RERED project, contributing over 60% of the SHS sales (see figure 6.2 below).

The consequence of Grameen Shakti's high sales figures is that over 500,000 houses and small businesses in rural Bangladesh, which previously had no access to grid electricity, now have electricity, supplied for the first time by Grameen Shakti's SHS. As rural Bangladesh has over 25 million households, Grameen Shakti is far from delivering universal electricity access. However, for a project which was originally only expected to produce 50,000 SHS, Grameen Shakti's dissemination of SHS has been judged an overwhelming success (see section 7.2.1).

Figure 6.1: Grameen Shakti's solar home system sales each year. Source: Grameen Shakti (n.d.(e)).

[64] In fact, Grameen Shakti announced the sale of its one millionth SHS on the 30th November 2012 (Energyforall 2012, December 4).

Figure 6.2: SHS sales by all Partner Organisations in the RERED project. Grameen Shakti has sold the vast majority of SHS in the RERED project, compared to other POs, from 2003 to 2010 . Source: IDCOL (2010c).

6.2.2 Biogas plant sales over time

The biogas plant became a standard Grameen Shakti product in 2005, with funding and grants through the 'National Domestic Biogas and Manure Programme' (NDBMP) from 2006. The NDBMP's expectation for its Partner Organisations was to build 40,000 biogas plants by 2012 (IDCOL 2010a). Grameen Shakti, in a similar vein to its SHS project, had higher expectations. It saw a potential market of "four million [cow waste] biogas plants and at least one million poultry waste based biogas plants" (Barua 2007, p.10). Out of this potential market, the initial aim stated by Grameen Shakti was for 200,000 biogas plants sold by 2010 (van Nes *et al.* 2005, p.36). However, as time went by and sales growth was slower than hoped, expectations lowered. In 2007, the time-frame for the 200,000 biogas plant sales was revised to 2012 (Barua 2007, p.10). And by 2010, the number of expected sales was substantially reduced, with only 50,000 biogas plants expected to be sold by 2012 (Yunus 2010).

The sale of biogas plants has been slower than hoped for by Grameen Shakti (see figure 6.3 below) with less than 16,000 biogas plants sold by the end of 2010. Grameen

Shakti's biogas plant sales figures are more consistent with the NDBMP's lower expectations. In comparison to other Partner Organisations, Grameen Shakti has contributed a substantial number of biogas plant sales to the NDBM Programme (see figure 6.4). There are several theories for why the sales and sale expectations for biogas plants have been low. Some of these reasons are outside of Grameen Shakti's control, with natural events such as floods and disease outbreaks: "We believe that the growth of biogas plants would have been higher since 2006, if poultry firms did not suffer from bird flue scare" (Barua 2009). Other reasons concern the difficulty of construction, and the failure of previous (non-Grameen Shakti) programs, which damaged the reputation of biogas plants (Gomm 2009, January 12). These dimensions, and others, will be explored further in later sections of this chapter. For now, it is suffice to judge that Grameen Shakti's dissemination of biogas plants to rural Bangladeshi was not as high as it had hoped.

Figure 6.3: Grameen Shakti's biogas plant sales each year. Source: Grameen Shakti (n.d.(f)).

Figure 6.4: Biogas plant sales by all Partner Organisations in the NDBM programme. Grameen Shakti has sold over half of the biogas plants in the NDBM Programme, compared to other POs, from 2006 to 2010.[65] Source: IDCOL (2010d).

6.2.3 Improved cook stove sales over time

Initially, Grameen Shakti expected its improved cook stoves (ICS) to disseminate quickly and widely across rural Bangladesh, as the technology was relatively inexpensive and a household necessity for most. That is, according to Grameen Shakti, the ICS had a very high potential customer-base. Grameen Shakti and its supporting funder, GTZ, both envisioned an ICS market of more than 25 million households (Gomm 2009, January 12; Barua 2009, January 13). Dipal Barua (2007, p.11) was hopeful of selling "at least two million ICS in the first three years of the program". However, by 2009 this sales figure had not eventuated. Indeed, as seen in the graph below (see figure 6.5), fewer than 20,000 ICS had been sold by this time.

While various factors can help to explain these relatively low sales figures, one of the primary reasons is that, similarly to the biogas plant, the ICS is a relatively new

[65] The Partner Organisations presented in the pie chart are: 'Hosain Biogas and Compost Fertilizer Company' (5%), 'Rahman Renewable Energy Company Limited' (6%), 'Kamrul Biogas and Compost Fertilizer Co Ltd' (7%), 'Save Our Urban Life' SOUL (8%), Other (21%), Grameen Shakti (53%).

technology for Grameen Shakti in its operational history (as further explored below). Unlike the biogas plants, however, the expected number of sales from the ICS was substantial. Furthermore, these high sales rates were expected to 'take off' from the first year of sales. In 2008, Grameen Shakti had still sold more ICS than other Partner Organisation in the GTZ's 'Renewable Energy and Energy Efficiency Programme' (REEEP) (see figure 6.6 below), but this was not as significant a market-share as seen in the other technology projects.

Another initially puzzling enigma in the ICS dissemination is the seemingly sudden increase in sales between 2009 and 2010. As seen in the graph below (see figure 6.7), the initial sales trend from 2006 to 2009 (in light pink) predicts that between 60,000 and 80,000 ICS would be sold in 2010. Instead, 160,000 ICS were sold in 2010 (in dark red), double that predicted from the previous sales trend (see Appendix B.1 for trend calculations). As further explored in the following sections, this jump in sales has been attributed to changes surrounding the implementation of a new project for the ICS involving the Clean Development Mechanism (CDM) scheme (Kamal 2011, March 24).

After the implementation of the CDM scheme, the sales expectations of the ICS changed. According to the *CDM Program Activity Design Document* (UNFCC 2009b, p.3), Grameen Shakti was expected to sell 11,000 ICS in 2010, which it then easily achieved. Revised expected sales, according to Yunus (2010) were 400,000 ICS by 2011 and "[o]ur first million ICS will be installed by December, 2013". Similarly, the new CEO, Abser Kamal (2010, p.19), plans to "construct 500,000 cooking stoves in the next two years". With an installation rate of over 20,000 ICS sales per month in early 2012 (Grameen Shakti 2012), this appears to be an achievable objective. In sum, while early dissemination of the ICS under the REEE Programme was lower than expected, the CDM project has seen a significant rise in the number of Bangladeshi households acquiring Grameen Shakti's improved cook stoves in recent years.

Figure 6.5: Grameen Shakti's improved cook stove (ICS) sales each year. Source: Grameen Shakti (n.d.(g)).

Figure 6.6: ICS sales by all Partner Organisations in the REEE programme. Grameen Shakti had sold one fifth of the ICS in the GTZ's REEE Programme in the year 2008. Source: GTZ data acquired from Mr Otto Gomm (2009, January 12).

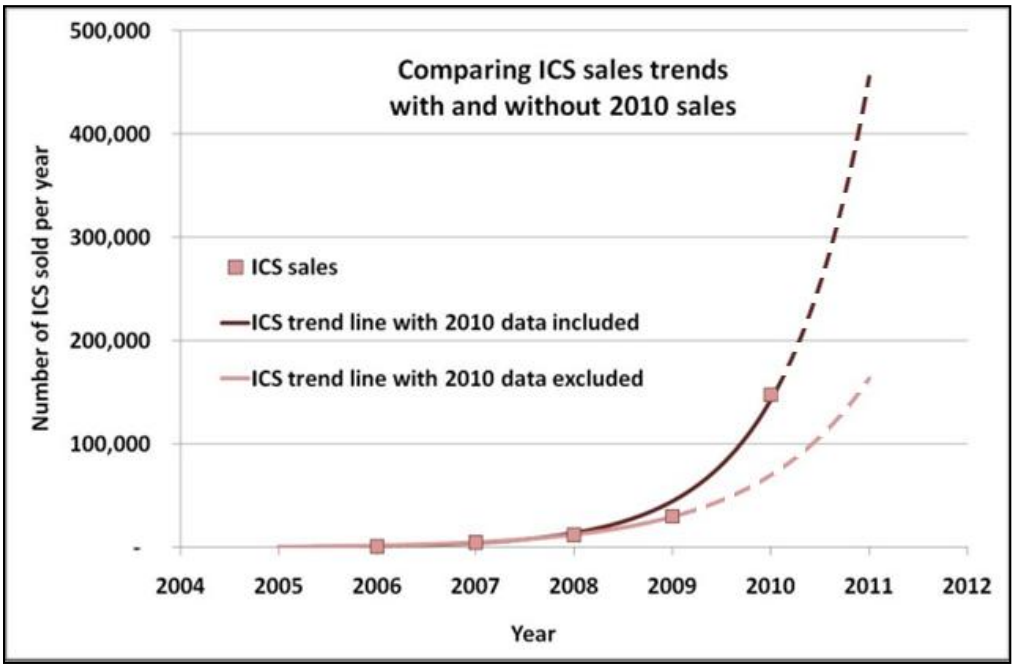

Figure 6.7: Improved cook stove sales predictions based on 2005-2009 and 2005-2010 data. Dashed lines indicate projected trend-lines. See Appendix B.1 for the regression equations used to create these graphs.

6.2.4 Comparison of product sales

In comparison to the SHS sales targets and the sales figures of other Partner Organisations, Grameen Shakti's SHS sales are high. In contrast, the introduction of biogas plants and ICS, initially, yielded disappointing results for Grameen Shakti in terms of sales figures. Both technologies had sales well below initial targets. The ICS and biogas plant sales were also well below SHS sales in every year from 2005 to 2009. A comparison of the SHS, biogas plant and ICS sales across the different Bangladeshi districts in 2008 (see figure 6.8 below) shows that the SHS were the dominant technology in terms of sales in every district.

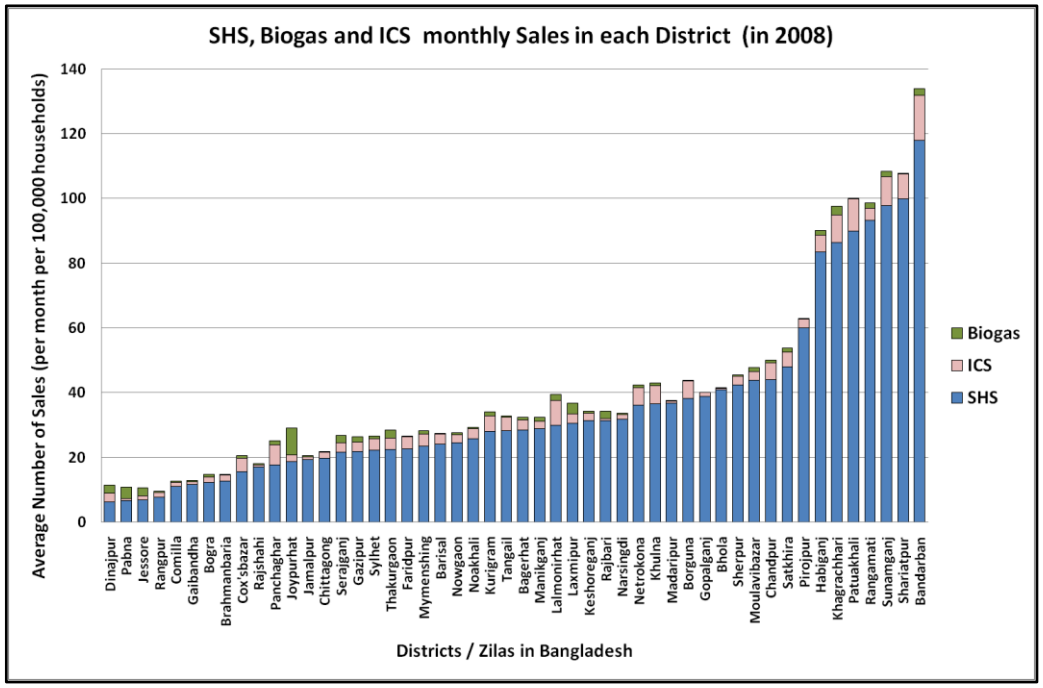

Figure 6.8: Technology sales across different districts in Bangladesh in 2008 (monthly average). Source: See Appendix A, table A.1.

Since the ICS and biogas plants only became standard Grameen Shakti technologies in the mid-2000s, the dominance of SHS sales is somewhat expected. Being the primary product sold since 1996, Grameen Shakti's SHS were more established in the market place, and Grameen Shakti branches and staff can be expected to have been more accustomed to selling the SHS technology. Many of the Grameen Shakti branches were opened between 1996 and 2004, when SHS were the only product sold, and thus these branches were opened in districts which most suited the SHS sales. Thus more infrastructure (branch buildings) and staff are located in these districts, with a historical focus on the SHS technology. However, this cannot be the entirety of the story, as an analysis of the new Grameen Shakti branches, which opened in 2008, reveals that SHS achieved the highest sales there also, as demonstrated in figure 6.9 below. On average, over the new branches, there were 11 times more SHS sold than ICS, and 27 times more SHS sold than biogas plants: A difference which was found to be statistically significant (see Appendix B.2).

However, as noted in section 6.2.3 above, the ICS's low sales figures dramatically increased with the introduction of the CDM in 2010. As seen in the graphs 6.10 and

6.11 below, the jump in sales from 2009 to 2010 has significantly changed the predicted sales for ICS into the future, with sales expected to outpace even SHS sales in 2011.[66] The dominance of the SHS sales in the early years, and the dramatic increase in its ICS sales more recently, are interesting phenomena that requires further attention.

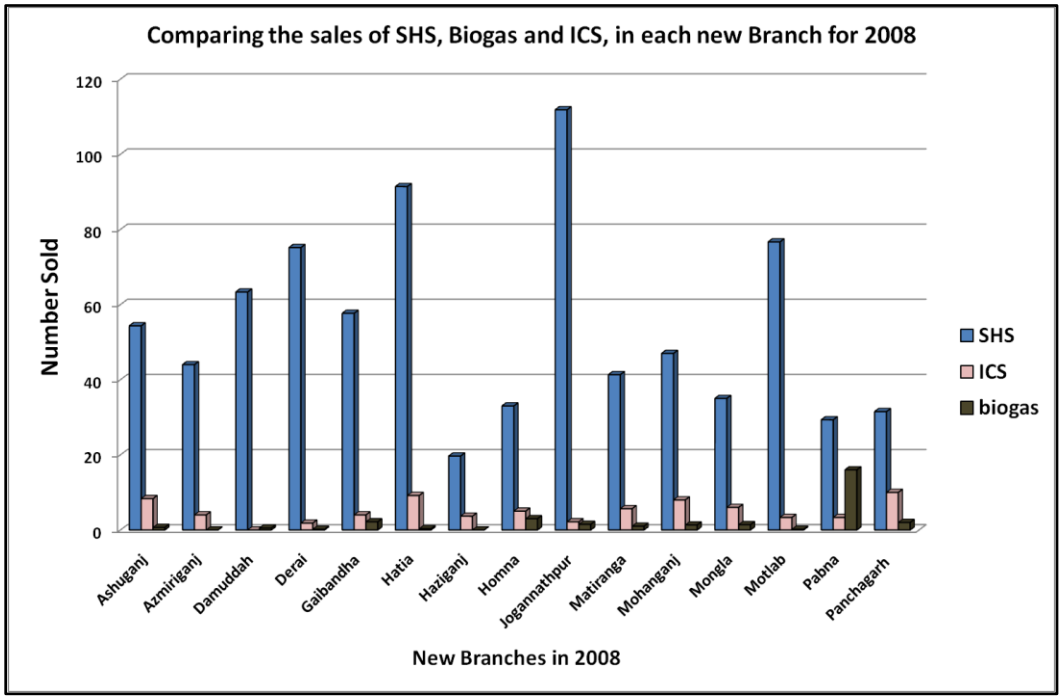

Figure 6.9: Technology sales in new branches which opened in 2008 (monthly average of sales figures in which the branch was operational). Source: See Appendix A, table A.1.

[66] Recent analysis of the 2012 Grameen Shakti sales figures shows that the sales of the ICS have not increased as rapidly as the projected trend-line suggests in figure 6.11; however, the sales are still significantly higher than pre-2010, with approximately 15,000-20,000 ICS units being sold per month (Grameen Shakti 2012).

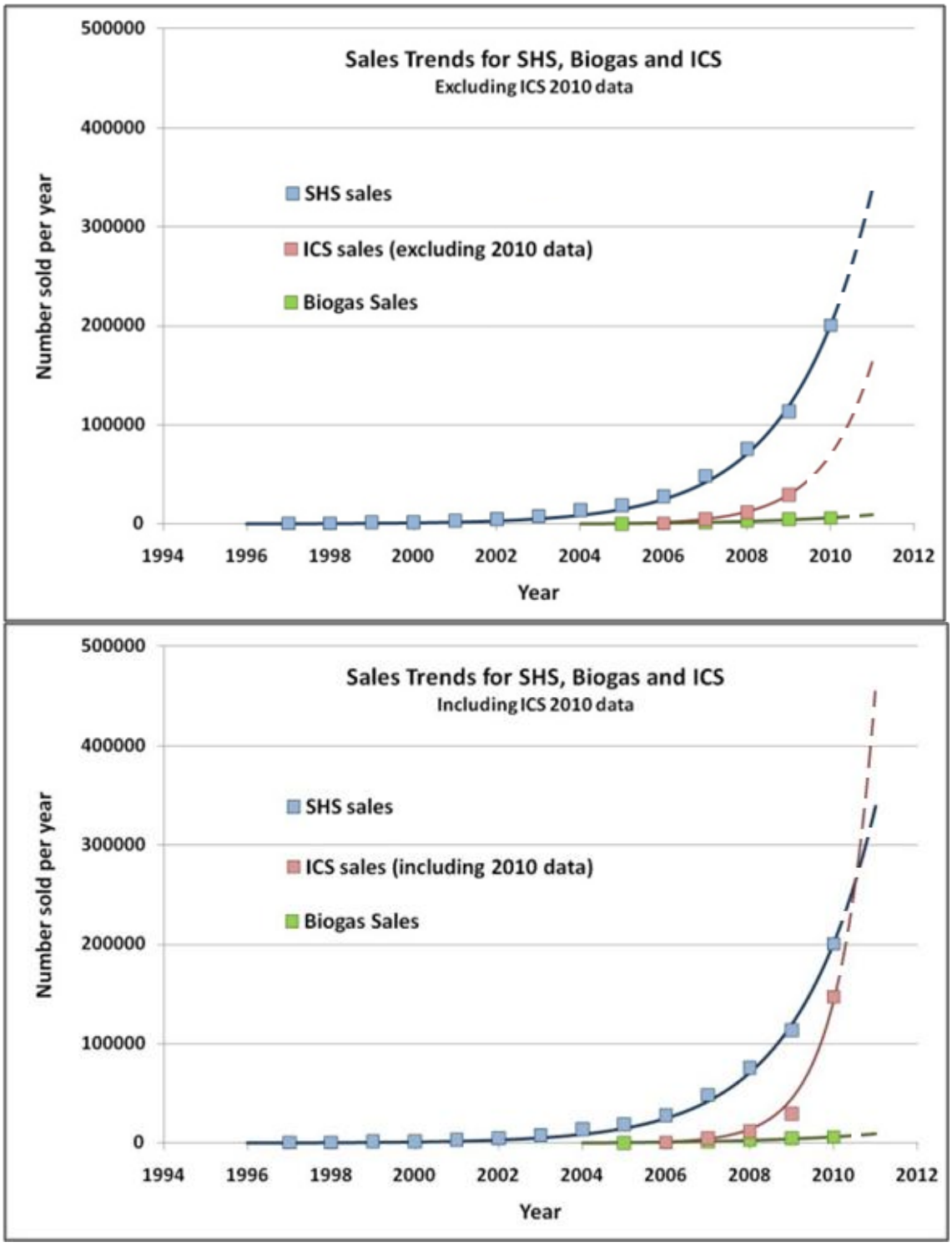

Figure 6.10 and 6.11: Grameen Shakti's sales trends and predictions for SHS, biogas plants and ICS over the years, excluding the ICS sales figures for 2010 (top), including the ICS sales figures for 2010 (bottom). Dashed lines indicate projected trend-lines. See Appendices B.1.1 and B.1.2 for the regression equations used to create these graphs.

6.3 Targeting

6.3.1 Targeting lighting and cooking needs across Bangladeshi districts

In its initial stages, Grameen Shakti publicised that it was purposefully targeting regions of Bangladesh that did not yet have electricity. "Grameen Shakti selects areas where there is no source of conventional electricity or areas with low coverage of Rural Electrification Board (REB) or where there is no chance of REB expanding within 5-10 years period" (Barua 2001, p.206). While no such 'targeting' statement was issued for the ICS or the biogas plants, it can be assumed that successful targeting would see a greater up-take of the technologies in the regions which most need them, that is, in areas where biomass cooking is most prevalent.

In order to evaluate how well Grameen Shakti is addressing the energy needs of different districts, we can investigate where its sales were greatest and lowest. For example, does it sell more SHS in districts which have less electric grid connectivity; does it sell more biogas plants in districts where more households have sufficient cows or chickens to operate a biogas plant;[67] does it sell more ICS in districts where more households rely on wood or straw for cooking and have low gas connectivity? In order to answer these questions, it is informative to attempt to correlate biomass fuel-use with ICS sales, the number of cows/fowls with the sale of biogas plants, and the percentage of homes without electricity access and the sale of solar home systems. These correlations (in table 6.1) were created using the technology sales data and the energy statistics data for the districts of Bangladesh over various years.[68]

[67] This question is more about the opportunity for rural people to use a biogas plant, rather than their need for biogas. Regardless, this is still an informative line of enquiry for determining how Grameen Shakti is (or is not) targeting customers.

[68] See Appendix A for the data tables. The author did not, unfortunately, have access to data concerning which districts experienced more or less fuelwood scarcity.

Correlations between…		Correlation Value
SHS correlations	SHS sales and kerosene use	0.054
	SHS sales and electricity	-0.054
Biogas plant correlations	Biogas sales and cow ownership	0.205
	Biogas sales and fowl ownership	0.113
ICS correlations	ICS sales and straw fuel use	-0.274
	ICS sales and wood fuel use	**0.417***
	ICS sales and gas fuel use	-0.172

* indicates significance to 0.05 using the Pearson test

Table 6.1: Correlations between Grameen Shakti sales and electricity, livestock ownership and fuel usage, across the Bangladeshi districts. See Appendix A for the data tables used to create these correlations.

From the correlation values in table 6.1 above, we see that the number of SHS sold does not significantly correlate with districts that have low electricity (-0.054) or high kerosene usage (+0.054). On first inspection, this implies that either Grameen Shakti is not targeting non-electrified districts (as they claim to be) or that these non-electrified districts are less interested or able to afford the technology despite Grameen Shakti's targeting. Since the non-electrified districts are generally poorer than the more electrified districts, their limited purchasing of the relatively expensive SHS may be somewhat expected. According to a socioeconomic survey conducted by Ahammed and Taufiq (2008, p.98) in northern Bangladesh, approximately 48% of the REREDP's SHS customers had a high annual income level of between 51,000 Taka and 100,000 Taka, and 84% of these indicated that they had "no other sources of electricity except solar energy". This suggests that Grameen Shakti (and possibly other POs) may indeed be targeting 'need', but that affordability may be an issue for the poorer households and regions.

The correlations between biogas plant sales and the ownership of cows (+0.205) and fowls (+0.113) are also not statistically significant. In order for a biogas plant to operate, it requires a regular amount of cow or chicken manure to be added to the system. Hence we would expect Grameen Shakti's sales of biogas plants to be higher for districts where there are a higher number of cows or chickens per household. This does not appear to be the case. Since districts with higher numbers of livestock are generally more rural and remote, perhaps this lack of correlation can also be somewhat explained in terms of affordability.[69] Alternatively, Grameen Shakti may not have been adequately targeting the districts that could use biogas plants. We will return to this question in the following sections.

Contrastingly, the correlation between the number of ICS sales and the districts where a majority of households use wood, for traditional cooking, does appear to be significant and positive (+0.417). This means that Grameen Shakti may in fact be adequately targeting districts with a higher percentage of households who cook with wood and could benefit from Grameen Shakti's more efficient ICS. However, the correlation between ICS sales and the use of straw, as a fuel in traditional stoves, is not significant (-0.274). Districts with high levels of straw fuel-use would benefit from the improved cook stoves as much, if not more so, than those using wood, due to the inefficiency of straw as a fuel. Thus further examination is needed to uncover why this correlation is not significant also. To investigate this apparent contradiction, and the SHS and biogas plant results above, it is informative to do further statistical analysis across the districts, using a wider spectrum of data.

[69] While this scenario may seem likely, the author found no statistically significant correlation between cow/fowl ownership and a district's average household income level (using the data presented in section 6.3.2). This leads us to consider alternative explanations more thoroughly (as will be done in section 6.5.2).

6.3.2 Targeting poorer and rural districts

6.3.2.1 A statistical interpretation of poverty

Before we can assess Grameen Shakti's ability or desire to target the moderately poor and poorest households and districts, we need to gain a way to measure poverty in Bangladesh. Low household income, for example, can be one indicator of poverty. Data available from the Bangladeshi Census on household income, however, was only available for a smaller subset of districts (BBS 2003, p.217). This means that any data analysis of the relationship between the technology sales and district incomes may be unreliable (*e.g.* it may exclude several significant branches). One way to by-pass this problem is to use a representative measure of poverty and income instead. In table 6.3 below, for example, we see that correlations between cooking fuel type and income level produce informative and statistically significant relationships.[70] The correlation values imply that straw fuel-usage is positively correlated with the lowest level of income (+0.659), but negatively correlated with the other income brackets (-0.703, -0.493, -0.603). Wood fuel-usage, contrastingly, appears to be negatively correlated with the lowest income bracket (-0.513), and instead correlates most strongly and positively with the second lowest income bracket (+0.699). Finally, gas fuel-usage is shown to be positively correlated with the wealthiest districts (+0.576, +0.581).

These findings are supported in the literature by studies which show that it is the poorest households who are often forced to use the least efficient, cheapest and most easily accessible fuel sources, such as leaves and straw (Akther *et al.* 2010, p.146). Contrastingly, it is the richest households and districts which have access to gas connectivity. Wood is used by rural households without gas access, but who are wealthy or fortunate enough to be able to afford or collect fuelwood (see section 3.5). Authors such as Matin and Hulme (2003, p.651) distinguish between the "hardcore poor" and "moderate poor" in Bangladesh, which may be a useful characterisations of those households relying on straw and wood fuels respectively. The strong relationship

[70] The correlations between income and livestock, and the correlations between income and electricity, were not statistically significant. Note also that while there was data on other biomass fuel types, it was straw, wood and gas that were the most informative in terms of links with income groups.

between fuel and income will enable us to better interpret the following statistical analysis, as we can now use the fuel-usage data as a representative indicator of (and proxy for) poverty level. That is, high straw usage may be used to indicate the poorest districts, high wood usage to indicate the moderate-income districts, and high gas usage to indicate the wealthiest districts.

	Correlations with …		
Household income (*p.a.)*	Straw	Wood	Gas
Tk. 0 - 2000	**0.659***	**-0.513***	**-0.539***
Tk. 2001 - 4000	**-0.703***	**0.699***	0.108
Tk. 4001 - 6000	**-0.493***	0.334	**0.576***
Tk. 6001 - 8000	**-0.603***	**0.454***	**0.581***
Tk. 8000 +	-0.354	0.082	**0.838***

*indicates significance to 0.05 using Pearson test

Table 6.2: Correlations between fuel types and household income ranges, across the Bangladeshi districts. See Appendix A for the data tables used to create these correlation values.

6.3.2.2 Creating poverty and rural statistical factors

In addition to the previously presented statistical data on income, fuel, electricity and cattle, it is also informative to include more general statistical data on Bangladesh and Grameen in the analysis to come. In particular, the most useful statistics were found to be district-wise household density, literacy, and the prevalence of Grameen Bank branches (see Appendix A for data tables). Household density is an indicator of how central and urban, or remote and rural, a district is; literacy is a useful human development indicator; and the location of Grameen Bank branches will later present itself as interesting statistic in comparison with Grameen Shakti. With these statistics, available from various sources (see Appendix A for references), we can attempt to build a more comprehensive picture of what type of districts have the strongest sales of Grameen Shakti's technologies. From this, we can better analyse how well Grameen Shakti is targeting more rural and poorer districts.

Multivariate linear regression is a useful statistical tool with which to examine the relationship between the technology sales and the array of data available. Due to the potential for collinearity (*i.e.* the variables are not independent and thus may complicate interpretation of the relationships), it is helpful to perform 'factor analysis' on the data. Factor analysis creates new variables, or 'factors', which represent a combination of the data statistics. Specifically, 'Principal Component' factor analysis allows us to create new, independent factors which can be used as independent variables in a multivariate linear regression against the technology sales.

The factor pattern below (table 6.3) shows the creation of two new factors by factor analysis.[71] Factor 1 appears to be dominated by its positive relationship with straw fuel-usage (+0.944) and its negative relationship with wood fuel-usage (-0.898).[72] Thus, as explored above with the income correlations in section 6.4.2.1, factor 1 could represent districts with a higher percentage of the poorest households. The interpretation of factor 1 as a 'poverty factor' is further supported by its negative relationship with electricity (-0.476), and its positive relationship with the percentage of Grameen Bank offices in the district (+0.620) (as explained further later). Let us, then, use factor 1 to represent the prevalence of poverty in a district, such that factor 1 (henceforth the Poverty Factor) will be high for districts where a majority of households use inferior cooking and lighting materials.

Factor 2, alternatively, appears to be dominated by a positive relationship with cattle and fowl ownership (+0.780, +0.656) and a negative relationship with gas fuel usage and household density (-0.729, -0.701). Rural farming districts have the most livestock, and it is typically the more remote districts of Bangladesh which have the lowest gas connectivity and the lowest population density (Imam 2002, April 25). Thus, it appears that factor 2 could be interpreted as the remoteness or rurality of a district. Therefore, we now have two new useful district statistics: factor 1, the Poverty Factor, which

[71] Factor analysis (and the multivariate analyses in the coming sections) were performed by the author using the XLSTAT statistics package.

[72] The terminology 'positive relationship' and 'negative relationship' is used to represent 'proportional relationship' and 'inversely proportional relationship' respectively. The terms 'positive' and 'negative' were used for ease of explanation: they help to create a clearer link between the factor pattern value and the meaning of this value for the reader.

represents the poverty level of a district, and factor 2, the Rural/Remote Factor, which represents how remote and rural a district is.

Variables	Factor 1 'Poverty Factor'	Factor 2 'Rural/Remote Factor'
Straw fuel use	**0.944**	0.117
Wood fuel use	**-0.898**	0.119
Gas fuel use	-0.320	**-0.729**
Cow ownership	0.056	**0.780**
Fowl ownership	-0.039	**0.656**
% villages with Grameen Bank	**0.620**	-0.202
HH density	0.519	**-0.701**
Electricity	**-0.476**	-0.448
Literacy rate	-0.070	**-0.297**

Bold font indicates a relatively stronger relationship between the factor and the variable (corresponding to the factor for which the squared cosine is the largest)

Table 6.3: Factor Pattern of Bangladeshi district statistics. Two factors emerge from the factor analysis of various district statistics: a Poverty Factor and a Rural Factor.

6.3.2.3 Multivariate regression of poverty and rurality against the sales figures

The factor analysis of a range of district-wise socioeconomic variables, conducted above, has provided us with two representative factors: the Poverty Factor and the Rural Factor. The values of these factors for each districts (as seen in the Factor Score table in Appendix B.3) provide us with two new sets of statistics with which to compare the technology sales. Since the factor analysis performed above ensured that the two factors would be independent of each other, we are able to now go one step further than simple correlations between the product sales and factor values. That is, we are able to perform multivariate linear regression analysis, in order to see if the Poverty and Rural Factors have a relationship with the number of solar home systems, biogas plants and improved cook stoves sold in each district. Multivariate linear regression attempts to calculate the likelihood that a combination of factors could predict the number of products that will be sold in each district. It does not imply a

causal relationship, but it can tell us, for example, whether there are generally more or less SHS sold in poorer districts, or more or less biogas plants sold in remote rural districts.

In the analyses below, the form of the multivariate equation used was,

$$\textbf{Sales of Y} = \sum^{N}_{i} c(i)\ \textbf{Var X}(i) + \text{intercept},$$

where "**Sales of Y**" is the vector of all districts' average SHS, biogas plant or ICS sales per month (per lakh (100,000) households) in 2008; "N" is the number of independent variables (in this case N= 2); "c(i)" are the unknown regression coefficient values to be solved for; and "**Var X**(i)" are the independent variable vectors, that is, the Poverty and Rural Factors.[73] The values of the coefficients, c(i), when solved for, indicate the type and strength of relationship between the product sales and the factors. They will hopefully provide some insight into whether the technology sales are possibly related to the poverty and rurality of a district.

Firstly, for the sale of solar home systems, multivariate linear regression produced the following equation:

$$\textbf{Sales of SHS} = -8.357\textbf{Poverty Factor} + 8.474\textbf{Rural Factor} + 35.862.$$

This equation (and table 6.4 below) suggests that Grameen Shakti is generally selling more SHS in districts which are relatively wealthier, and selling fewer SHS in the poorest districts (this is indicated by the negative coefficient for Poverty Factor).[74] The equation also suggests that Grameen Shakti is generally selling more SHS in the most rural and remote districts, and selling fewer SHS in the less rural and remote districts (indicated by the positive coefficient for the Rural Factor). This is supported by the regression results in table 6.4 below, which show that all of the coefficients are significant to a 99% confidence level (two-tailed). The regression equation itself is

[73] Bold font indicates that the variable is a vector, *i.e.* it incorporates the values of all districts.

[74] 'Relatively wealthier' is used to indicate those districts which are not the poorest, as measured by the Poverty Factor.

found to be significant also, within a 99% confidence level in the Fischer's F test (F = 23.615, Prob>F = <.0001), implying that the relationship is robust, rather than coincidental. The amount of variance in the data which is explained by the equation, *i.e.* the adjusted R^2, was found to be significant at 48%. This implies that approximately half of the variance in the data (that is, the different influences on the SHS sales) is described in the regression equation. While this is a robust statistical result, it still indicates that more data is needed for a comprehensive understanding of all variables affecting the different SHS sales figures across the districts.

Independent Variables, Var X(i)	**Regression Coefficient Values**, c(i)	**Standard Error 5%**	**Prob > |t|**	**Correlation-** Var X(i) and SHS sales
Poverty Factor	-8.357***	1.687	< 0.0001	-0.510
Rural Factor	8.474***	1.779	< 0.0001	0.491
Intercept	35.862***	2.766	< 0.0001	NA

R^2=0.501, adj. R^2=0.480

***result is significant to p<0.005, ** result is significant to p<0.01, * result is significant to p<0.05

Table 6.4: Multivariate linear regression results for SHS sales.

Secondly, for the sale of biogas plants, multivariate linear regression gave the following equation:

Sales of Biogas = -0.001**Poverty Factor** + 0.140**Rural Factor** + 1.169.

This equation, unlike the SHS equation, cannot be used to make any conclusions about biogas plant sales, since the equation and coefficients are not statistically significant (see table 6.5 below). That is, firstly, the regression results in table 6.5 below imply that the biogas plant sales do not have a statistical relationship with either poverty or rurality, as neither of the coefficients is significant. Secondly, the regression equation itself is also found to not be significant in the Fischer's F test (F = 0.636, Prob>F =0.534). Similarly, R^2 was found to be very low at 0.026. The lack of a statistically

robust result for biogas plant sales may imply that there is little relationship between biogas plant sales and the poverty or rurality of a district. Alternatively, the low sales numbers in most districts may make any meaningful statistical analysis difficult. The low sales numbers, however, are important in themselves, and will be discussed later.

Independent Variables, Var X(i)	**Regression Coefficient Values**, c(i)	**Standard Error 5%**	**Prob > |t|**	**Correlation-** Var X(i) and Biogas plant sales
Poverty Factor	-0.001	0.118	0.991	-0.002
Rural Factor	0.140	0.124	0.265	0.162
Intercept	1.169	0.193	< 0.0001	NA

R^2=0.0260, adj. R^2=-0.015

***result is significant to p<0.005, ** result is significant to p<0.01, * result is significant to p<0.05

Table 6.5: Multivariate linear regression results for biogas plant sales.

Thirdly, for the sale of improved cook stoves, multivariate linear regression gave the following equation:

Sales of ICS = -0.587**Poverty Factor** + 0.939**Rural Factor** + 3.618.

This equation (and table 6.6 below) suggests that Grameen Shakti is generally selling more ICS in districts which are relatively wealthier, and selling fewer ICS in the poorest districts (this is indicated by the negative coefficient for the Poverty Factor). The equation also suggests that Grameen Shakti is generally selling more ICS in the most rural and remote districts, and selling fewer ICS in the less rural and remote districts (indicated by the positive coefficient for the Rural Factor). This is supported by the regression results in table 6.6 below, which show that all of the coefficients are significant to 99% confidence level (two-tailed). The regression equation itself is found to be significant also, within a 99% confidence level in the Fischer's F test (F = 16.692, Prob>F = <0.0001), implying that the relationship is robust. The amount of variance in the data which is explained by the equation, *i.e.* the adjusted R^2, was found to be

significant at 39%. This implies that just over a third of the variance in the data (that is, the different influences on the ICS sales) is described in the regression equation. Thus, similarly to the SHS, while this ICS regression is informative and statistically significant, more data is needed for a comprehensive understanding of all variables affecting the different ICS sales figures across the districts.

Independent Variables, Var X(i)	**Regression Coefficient Values**, c(i)	**Standard Error 5%**	**Prob > |t|**	**Correlation-** Var X(i) and ICS sales
Poverty Factor	-0.587***	0.185	0.003	-0.355
Rural Factor	0.939***	0.195	< 0.0001	0.538
Intercept	3.618***	0.303	< 0.0001	NA

R^2=0.415, adj. R^2=0.390

***result is significant to p<0.005, ** result is significant to p<0.01, * result is significant to p<0.05

Table 6.6: Multivariate linear regression results for ICS sales.

6.3.2.4 Initial interpretation of the regression results

In summary, the multivariate linear regressions for SHS and ICS sales appear to be statistically robust and yield some interesting results. Both SHS and ICS sales are proportionally related to the Rural Factor, and inversely related to the Poverty Factor. The Poverty and Rural Factors were intentionally constructed to be independent of each other, so that we could see the effect of each, separately, on Grameen Shakti sales. The regression results, then, could be interpreted to mean that, in districts with higher levels of poverty, there are generally fewer SHS and ICS sold. Similarly, in more remote and rural districts there are generally more SHS and ICS sold.[75]

An initial interpretation of these results appears to imply that Grameen Shakti has successfully targeted rural Bangladesh, but has not successfully targeted the poorest

[75] For districts with high levels of both poverty and rurality, we would expect to see an averaging-out of the product sales (if poverty and rurality were measured via the Poverty and Rural Factors). The highest SHS and ICS sales would expect to be seen in districts which are more rural and relatively wealthy. And similarly, the lowest SHS and ICS sales would expect to be seen in districts which are more urban and poorer.

districts. However, low and high sales figures reflect more than just the seller's ability to target customers; it also reflects the customer's need, want and/or ability to buy the technology. Affordability, for example, may be a problem for the poorest districts. It is conceivable that regardless of Grameen Shakti's targeting of the poorest districts, it is in these areas where the ability to afford to buy the SHS will be lowest, and hence sales would be lowest (as was suggested in section 6.3.1). For SHS, this is a highly likely scenario. SHS would appear prohibitively expense to the poorest households in Bangladesh, due to the high cost of the technology.

For the low ICS sales, however, this explanation is not as plausible. The ICS are relatively inexpensive and so we could expect to find a market in even the poorest districts. In the poorest districts, furthermore, the most used biomass fuel is (inefficient) straw, which implies that more efficient cook stoves could be most beneficial to these households. With both the 'need' and the 'ability' to afford the ICS unable to explain the low sales result, this leaves a stronger case for arguing that Grameen Shakti has not been targeting the poorest districts, with either infrastructure (*e.g.* branches, staff) or advertising (to increase customer awareness *etc*). Thus an initial interpretation of the ICS regression result implies that in 2008 Grameen Shakti was not targeting the poorest districts or households for its ICS sales, despite the market potential. This result requires more exploration and analysis, however, before any firm conclusions can be made.

In terms of the biogas plant technology, the regression analyses showed that the biogas plant sales data did not significantly relate to either the Poverty or Rural Factors. This is a somewhat surprising result, as it could be expected that biogas plants (which need livestock waste to function, and which produce fertiliser for farming) would be most needed and desired in more rural areas. In section 6.3.1, it was postulated that the lack of correlation between livestock ownership and biogas plant sales may be the result of people in remote, rural districts being unable to afford the technology. The results here suggest otherwise. That is, the Rural Factor used in the regression is independent of (*i.e.* statistically uncorrelated with) the Poverty Factor, so that they could be interpreted independently. Irrespective of the wealth of a district,

there was no statistically significant relationship between the rurality of a district and the number of biogas plants sold.

The puzzle then is: If the technology is needed, and affordability is not a factor, then why have the biogas plant sales not been higher in these districts? One answer is that, despite the need, people do not want the technology or do not know about the technology. Both of these scenarios could possibly imply that Grameen Shakti has not been effectively targeting the most remote rural areas for its biogas plant sales, with either advertising or branches. Since Grameen Shakti has a strong presence in rural areas, in terms of SHS and ICS sales (as seen above), this is a surprising result. More information, it appears, is needed before any conclusions can be made concerning the biogas plant regression.

6.3.3 Targeting Grameen Bank members

In the factor analysis above, one variable which was found to be informative was the distribution of Grameen Bank branches and members across Bangladesh. Grameen Bank, a sister company of Grameen Shakti, has built a broad network throughout Bangladesh with its microfinance program. Not only is Grameen Bank well-known across Bangladesh, it also has extensive physical infrastructure (branch offices, group meeting houses) and established member groups. It could be expected, then, that Grameen Shakti would use this network in order to advertise and sell its own products. The result of this would be higher Grameen Shakti sales in districts with more Grameen Bank presence. Instead, unexpectedly, the opposite proves to be true. The statistics for 2008 show that Grameen Shakti sales were *lowest* in areas most populated by Grameen Bank branches (as demonstrated by the negative correlation coefficients in table 6.7 below).

Correlations	Ave # SHS sold per month per lakh HHs	Ave # ICS sold per month per lakh HHs	Ave # Biogas sold per month per lakh HHs
% Villages with Grameen Bank branches	**-0.657***	**-0.459***	0.009

* indicates a significant result using Pearson's test to 0.05 significance level

Table 6.7: **Correlations between Grameen Shakti sales and Grameen Bank prevalence**, across the Bangladesh districts. See Appendix A for the data tables which were used to create these correlations.

This surprising negative correlation was supported by observations and interviews during field research in 2008-2009. Of the all Grameen Shakti branches visited, only one Grameen Shakti manager had regular contact with his Grameen Bank counterpart. I found that none of the Grameen Shakti branches (which were visited during the field research) regularly and systematically used Grameen Bank centre meetings to promote their energy technologies. Interviews with both Grameen Shakti and Grameen Bank branch managers revealed that while there were hints of plans and directives from Head Office to make such contact, it was far from a priority (in 2008). The Grameen Bank managers that were interviewed appeared open to the idea of having Grameen Shakti staff visit their group meetings. The impression I received from some of the Grameen Shakti managers and staff, though, was that the Grameen Bank customers were not the normal Grameen Shakti 'target audience'. This makes more sense when we take a closer look at where Grameen Bank is most present, and 'who' constitute their primary membership group.

Grameen Bank identifies itself as an organisation that focuses exclusively on poor rural women. While several authors have disputed this claim (see section 2.4.3), data from the Bangladesh Bureau of Statistics (BBS 2008, pp.401-402) concerning the location and membership of the Grameen Bank branches in 2006 does support their claim to be pro-poor, or at least targeting the poorest districts. Table 6.8 below shows the correlations between income brackets and Grameen Bank branch prevalence, and its membership numbers, across the Bangladesh districts. As before, since the data

available for the income quintiles excludes several districts, it is also useful to use straw and wood usage as indicators of poverty and relative wealth (respectively).

Correlations	% Villages with Grameen Bank branches	% Grameen Bank membership (female)
Tk. 0 - 2000	**+0.437***	**+0.651***
Tk. 2001 - 4000	**-0.607***	**-0.563***
Tk. 4001 - 6000	-0.275	**-0.557***
Tk. 6001 - 8000	-0.384	**-0.585***
Tk. 8000 +	-0.056	**-0.494***
Straw fuel use	**+0.494***	**+0.595***
Wood fuel use	**-0.507***	**-0.473***

* indicates a significant result using Pearson's test to 0.05 significance level

Table 6.8: Correlations between Grameen Bank statistics and household income quintiles (and household fuel use), across Bangladesh's districts. See Appendix A for the data used to create these correlations, and an explanation of the data labels.

According to the correlations in table 6.8 above, the poorest districts (where inferior straw fuel is used) tend to have more villages with Grameen Bank branches and membership. Alternatively, it is the moderate-income districts (where wood is the main fuel) that Grameen Bank is less involved. This implies that in 2006, Grameen Bank was most deeply connected to and embedded in the poorest districts of Bangladesh.[76]

Combining this result with the observations from the field suggests that Grameen Shakti is possibly not using the Grameen Bank network because the Grameen Bank members are too poor to afford the Grameen Shakti products. While this is somewhat expected of the expensive SHS and biogas plants, the ICS are relatively cheap and could find a ready market with the Grameen Bank members. This brings us back to the quandary raised in section 6.2.4, about why SHS sales were so much higher the ICS

[76] Importantly, these statistics do not allow us to comment on whether Grameen Bank is targeting the poorest households in these districts.

sales prior to 2010. This prioritisation of SHS sales will require further investigation and analysis.

6.4 Affordability

Affordability has been a central mission for Grameen Shakti, and is considered by the WHO (2008, p.13) to be an essential component of a household energy development project. In the analyses above, however, it appeared that the sales of SHS and ICS were lowest in the poorest Bangladeshi districts in 2008. This raises important questions not just about Grameen Shakti's targeting but also about the affordability of its technologies for rural Bangladeshis. In the following, then, we will explore Grameen Shakti's attempts to make its technologies more affordable, in terms of parity with alternative fuels, Grameen Shakti's soft credit options, and its ability to service the poorest with its pro-poor options.

6.4.1 Parity with traditional fuels

One of the claims made by Grameen Shakti about affordability concerns the comparison between the cost of their technologies and the cost of traditional energy fuels and devices. Cost parity has been particularly touted for the solar home systems. That is, over several years of operation, the money that the user saves in kerosene costs is supposedly even with the total cost of the SHS.[77] According to Grameen Shakti's previous Managing Director:

> Grameen Shakti solar PV program really took-off the ground when rural clients realized SHSs are more cost effective than other conventional sources of energy such as kerosene. … A typical household spends more than Tk. 500 on kerosene without taking into account other costs such as

[77] In a 2005 national survey it was found that households with SHS used approximately one litre of kerosene for lighting per month, as opposed to the three litres that non-electrified households used (Wang *et al.* 2011, p.6).

> those health related. But a 50-watt system costs around Tk. 800 per month during payment of instalments and next to nothing later. (Barua 2007, p.4)

After the customer makes their final repayment to Grameen Shakti (2-3 years after purchase), the SHS requires minimal cost to maintain for its remaining lifespan (~20 years for the panel, ~5 years for the battery), since the SHS generate no monthly bills and have no fuel cost. Furthermore, Grameen Shakti argues that the SHS will also soon reach parity with electricity from the grid, as solar prices continue to drop (Barua 2009).

A similar but more complex argument can be made for the biogas plants and ICS, especially in regions were fuel is scarce. The biogas plant uses 'free' cow or fowl manure to produce cooking gas, as a replacement for fuelwood. The ICS uses less fuelwood for cooking than the traditional stoves. In both cases, then, the technology enables the user to collect less of the traditional biomass fuels. However, as biomass is often collected at zero monetary cost from surrounding woodlands and farms, this may not necessarily result in a financial saving for the user. As fuelwood has become scarcer though, the 'opportunity cost' (*i.e.* the time taken to collect the wood *etc*) has increased, and indeed many households have had to begin buying their fuelwood (see section 3.5). Thus the argument can still be made that use of biogas plants and ICS will save in cost or time, especially in areas of biomass scarcity. For biogas plants, furthermore, Grameen Shakti advertises that the slurry produced by the plant can be sold or used at home as an organic fertiliser. In this way, the more expensive biogas plant is closer to reaching cost parity. According to IDCOL, "the accumulation of these savings from biogas plants makes it possible to recover the total plant construction cost within five years" (IDCOL and SNV 2006, p.v).

While Grameen Shakti touts its success in enabling cost parity with its technologies, the interviews and observations from field work in 2008 illustrated a mix of responses. As expected, interviews with SHS customers appeared to generally confirm Grameen Shakti's claims about SHS cost parity over time. Many of the customers listed the cessation of kerosene payments as one motivation for buying the SHS. It must be noted though, that most customers interviewed had not been keeping track of the

savings they had made by not buying kerosene and did not appear to know when they had, or will, effectively cancel out their SHS cost. Most were primarily focused on the savings they would make when the repayments ceased (see below for analysis of Grameen Shakti's repayment schemes).

Alternatively, some biogas plant customers pointed out that while they were saving time by not collecting fuelwood, they were still taking time to shovel the livestock waste into the biogas plant input chamber. While the slurry fertiliser (produced by the plant) appeared to be considered a boon, most users did not yet benefit from the organic fertiliser business opportunity that Grameen Shakti claims to be establishing. The impression I received was that if this parallel fertiliser business were to succeed, and pay biogas plant owners for their slurry, this would greatly enhance the appeal of the technology. For the ICS, several of the women claimed that it did save them time with collecting wood and cooking, but others were more ambiguous. The time or cost savings expressed by the user (always in qualitative rather than exact hours) varied from branch to branch, and household to household.

6.4.2 Soft credit repayment options

While cost parity helps to justify the expenditure by rural households on Grameen Shakti's energy technologies, the initial cost of the technology is still often beyond the means of rural families. This has been a particular criticism of solar PV in developing countries over the past decades (Miller and Hope 2000, p.92). However, with the falling prices of solar panels and with Grameen Shakti's credit system, these technologies have become considerably more affordable. To offset the prohibitively high cost of the technologies, particularly the SHS and biogas plant, Grameen Shakti offers its customers 'soft credit' loans (see section 4.3). These loans effectively spread the total cost over several years with minimal interest. These options make solar and biogas plants affordable to many rural people, as they can slowly repay the loan, at the same time as saving money on the kerosene or biomass that they would have otherwise used.

Of the SHS and biogas plant customers interviewed, the response to soft credit repayment was almost universally positive. Most answered that the repayment option was "very important" in terms of their decision to purchase the technology. As we will explore later, though, this was often as much to do with Grameen Shakti's post-sale maintenance as it was to do with cost and ease of payment. The positive response by the customers interviewed was supported by branch statistics, with all of the Grameen Shakti branches visited having over 95% of their customers choosing to use the soft credit repayment option.

Interviews with ICS customers, however, did not reveal the same trend. Most customers either did not choose to use, or were not offered, the repayment option for their ICS purchase. In 2008, the official repayment option for the ICS was 50% of the price paid upfront and 50% in six months time (Gomm 2009, January 12; Kamal 2008, December 24). In practice, however, I found that most field branches had dispensed with this repayment offer, as the cost of the ICS was so low it was considered unnecessary.[78] Several of the Grameen Shakti staff told me that the repayment option was so infrequently asked for by customers in the past that they had stopped offering it. They also indicated that Grameen Shakti staff gained little financial incentive to return to the ICS customer's home for such a small repayment.

While most of the ICS customers interviewed were in agreement with the sentiments expressed by Grameen Shakti staff about repayment options for ICS, this was not reflected in the interviews of Bangladeshi villagers who were *not* customers. During field research visits to Grameen Bank group meetings, the question of ICS and affordability was raised. Most of the Grameen Bank members, when asked about payment options for the ICS, answered that the technology would be considerably more affordable with a repayment plan. Several women expressed the view that several monthly repayments (as is currently provided for the SHS and biogas plants purchases), would be the most affordable option for them. Many of those interviewed, in the Grameen Bank meetings, were adamant that the full cost of the ICS was too high

[78] A similar finding was observed by a World Bank (2010, p.24) survey.

to justify expenditure, considering they already had functioning traditional cook stoves.

This final statement has several implications, concerning the status of cooking, public awareness of the health problems from traditional stoves, and affordability. We will look into these other areas later. For now, one conclusion to be drawn from this is that the ICS, while seeming inexpensive in comparison to the SHS and biogas plants, is still relatively unaffordable (without pro-poor options) for the poorest Bangladeshi households, including some Grameen Bank members. As similarly found in a survey by Miah *et al.* (2009, p.76); "In the present study, 83% of women said they would like improved cookstoves … However, 17% [of those wanting the stove] were not willing to consider improved cooking stoves because of the money constraints". Grameen Shakti's lack of repayment options for the ICS, then, has repercussions for affordability for the poorest sectors of rural Bangladesh (*e.g.* the poorest 17% in Miah *et al.*'s study). The fact that most of Grameen Shakti's current and past ICS customers did not appear to be concerned with the lack of repayment option perhaps better reflects the wealth of the average Grameen Shakti customer, rather than the affordability of the technology for all Bangladeshis.

6.4.3 Pro-poor initiatives

Pro-poor affordability initiatives began to be publicised by Grameen Shakti from the mid-2000s onwards (see section 4.3). Grameen Shakti acknowledged that while its soft credit loan scheme did make the SHS and biogas plants more affordable for many rural Bangladeshis, the initial downpayment (*i.e.* 15-25% of the full price) was still too high for many in the poorer rural populace. In response, Grameen Shakti began several pro-poor initiatives, which included altering their technology designs to become less expensive and more accessible for poorer households, and establishing payment plans which better suited lower budgets.

One of the SHS pro-poor initiatives, began in 2007, was the introduction of cheaper, small wattage solar panels. These mini-solar panels, of only 10 Watt, are sufficient for

powering two light bulbs, and cost ~US$125 (see table 4.1). Grameen Shakti has touted this as evidence of its responsiveness to the needs and means of poorer Bangladeshis (Barua 2007, p.7). However, at every branch visited in 2008-2009, enquiries to see a mini-solar panel led to my being taken to a wealthier, electrified house with existing grid connection. The mini-solar panels were being used to supplement the wealthier household's grid electricity during power-outages. While this may or may not reflect a broader trend across Bangladesh, it does raise interesting questions about how (or whether) Grameen Shakti is ensuring that its pro-poor options are being utilised by the intended recipients.

Another pro-poor initiative promoted for the SHS is its micro-utility option. "Grameen Shakti introduced Micro-Utility System to help very poor consumers who cannot afford a complete solar home system" (Barua 2007, p.6). Officially, with micro-utility the customer repays the SHS loan over 3.5years, with no interest charged (see section 4.4.1.4). A similar multi-utility option is also promoted for those buying a biogas plant (Barua 2007, p.5). Both SHS and biogas plant micro-utility customers are encouraged to sell electricity/gas to their neighbours to help pay for the technology (Kamal 2010, p.19).

In 2007, the then Managing Director Dipal Barua (2007, p.6) touted the popularity of the micro-utility model: "The Micro-utility model has become very popular in the rural market places. … More than 10,000 micro-utility systems are operating in the rural market places." Since this time, however, Grameen Shakti's monthly reports have only stated that the number of micro-utility SHS sold is "over 10,000 systems" (Grameen Shakti 2010d). This suggests that either the micro-utility SHS sales are not increasing, or that the sales are not being recorded (which raises questions as to why the recording of pro-poor micro-utility SHS sales is not considered sufficiently important). During field research, requests to be taken to see micro-utility SHS met with mixed success. While many of the SHS owners in local markets rented out lights to their neighbours, this was not under the official micro-utility scheme (*i.e.* there was no special low-cost repayment plan). In terms of the biogas plant option, one owner of a chicken coop, observed in 2008, bought a biogas plant to run with their poultry farm

and was gaining income selling excess gas to their neighbours. Again, though, the author observed no biogas plants purchased under a special micro-utility scheme.[79]

In terms of pro-poor initiatives for the ICS, the option of a less expensive, single-pot stove was introduced to suit the means of poorer customers (under the GTZ program). The availability or promotion of this pro-poor option is questionable though, as no single pot ICS were observed by the author in 2008-2009 despite request to visit one. The general impression I received from Grameen Shakti staff was that the ICS are sufficiently inexpensive as to need little pro-poor incentives. As argued above, however, this assumption about the affordability of the ICS is not necessarily well-founded. Interviews revealed that the cost of the ICS, while low, was still considered too high by poorer women, without repayment options or other pro-poor incentives (see section 6.4.2). In sum, the pro-poor initiatives of Grameen Shakti appear to be positive in theory, but not sufficiently targeted or recorded in practice. This again raises questions about Grameen Shakti's commitment to enabling the poorest to access their technologies.

6.5 Sustainability of the technologies

In order to benefit rural communities, Grameen Shakti needs to not only broadly disseminate its technologies, it also needs to ensure that the technologies continue to be employed by the users. This requires that the technologies are technically, environmentally and socially sustainable. For example, the technologies need to continue to function properly for many years after purchase. Thus Grameen Shakti needs to ensure that all of their products are suitably designed for the Bangladeshi conditions, can be adapted if necessary, are regularly maintained and easily repaired. The technologies also need to be environmentally benign, in order to be

[79] A recent update of Grameen Shakti's reported sales statistics (January 2012) shows that Grameen Shakti is now recording its micro-utility SHS sales as "over 1205 systems" (Grameen Shakti 2012), which is a peculiar drop from the previously recorded number. It suggests that the number of micro-utility sales has not been properly recorded or published in the past. It also indicates that this option has not been well publicised by Grameen Shakti and/or is not popular with customers.

environmentally sustainable in the communities and cause no environmental harm. And finally, the technologies, and the dissemination process, need to have a level of social and cultural acceptance, as technologies which are not socially compatible will not continue to be used, regardless of benefit. Let us, then, look at each of these aspects of sustainability to assess how well Grameen Shakti has implemented its own mission in this regard.

6.5.1 Social sustainability

Since the "popularity" of its products is of central concern to Grameen Shakti (Yunus 2010), it appears to have taken efforts to ensure that its technologies are socially accepted, particularly through local participation and employment, advertising and training. In order to accommodate this, Grameen Shakti has built (and continues to build) a network of field offices throughout Bangladesh, which helps to "create good will and gain the trust of the rural people" (Barua 2010). Close contact with the customers also helps to build the organisation's reputation and brand recognition, which has been aided by name association with the already well-known Grameen Bank (as observed in several villages). Grameen Shakti employs marketing strategies to improve its social acceptance, such as distribution of flyers, market posters and displays, street banners and door-to-door sales. In the local markets of most villages visited in 2008-2009, Grameen Shakti's advertising materials were visible, with the SHS advertising (such as the street banner in figure 6.12) being the most prominent.

Figure 6.12: Advertising banner for a Grameen Shakti SHS 'sale'. Source: Photo by author, Bangladeshi village 2009.

Interviews, and observations of daily staff interactions, indicated that there was generally a positive reaction to the presence of Grameen Shakti in the community. Many of the customers appeared to value the relationship they had with Grameen Shakti staff, some of who had been approached door-to-door or in the local market place by Grameen Shakti staff. The ease of conversation and familiarity which appeared to exist between the Grameen Shakti staff and customers (and also non-customers) in many of the rural market-places, indicated that the staff regularly visited with customers and other locals in official and social capacities. However, a thorough investigation of the local acceptance of Grameen Shakti staff in the various rural communities would require a more long-term study than afforded here.

It was also observed that all Grameen Shakti's branch offices and GTC visited by the author in 2008-2009 employed several people from the local surrounding areas. This included professional masons for the biogas plants and ICS, and Grameen-trained technicians for sales, installation and accessory assembly. Grameen Shakti also sources the majority of its materials from local suppliers (see section 4.4.2). In the Phulpur branch, for example, a local mason was observed to produce a dozen or more cement ICS chimneys, while the customers sourced the mud/clay for the stove base themselves. Similarly, the GTC appeared to be well established in the villages, with local technicians trained to construct the various SHS components and accessories.

In order to familiarise people with all three technologies, Grameen Shakti uses training and marketing. In Grameen Shakti's training strategy, the GTC staff train users and other local people on how to use and do simple maintenance on the technologies. Interviews with customers in 2008-2009 confirmed that training of customers appeared to be a standard feature of Grameen Shakti's sales. The person who was trained and the degree to which they were trained, however, appeared to vary significantly across Bangladesh. While the (female) user of the ICS was most usually the person trained for this technology, the SHS training was as likely to be taken-up by a male family member. In some GTC, local women were specifically targeted for training in the use and maintenance of all three technologies, in a broader educational framework. These training sessions appeared to take place in the more well-

established Grameen Shakti regions. In less established regions, where a GTC was not yet present, customer training was provided by the Grameen Shakti branch staff.

6.5.2 Technical sustainability

Technical sustainability is important both for providing continued benefits for the user, in terms of efficiency and operation, and for building trust in the technology to ensure its continued use.[80] A newly introduced technology needs to function effectively and meet the needs of the user, with minimal problems. Many well-intended projects have started but failed due to unsuitable design, or failure by the implementing agency to monitor and repair the technology when needed. Grameen Shakti appears to be taking a proactive role in this regards. Its post-sales maintenance strategy, for example, has been often touted as one of the keys to Grameen Shakti's success. "Grameen Shakti had to earn the good will of the rural people and especially provide excellent after sales services to ensure the success of its program" (Barua 2007, p.3). In the following we will explore the various elements of the technical suitability and post-sales strategy for each of the technologies.

The primary requirement for the SHS is adequate sunlight. As noted by Dipal Barua (2002, p.33): "Bangladesh receives about 300 clear sunny days per year, and this is enough to produce an enormous amount of solar energy in a sustainable way". For performance during the rainy season, the response from the majority of customers interviewed was that the charge on the SHS battery was substantially reduced after approximately a week of rainy or heavily overcast weather. Most customers, however, appeared to accept this as an inherent limitation of the technology, which could be supplemented with the traditional kerosene lighting when necessary.

[80] The WHO (2008) sees social sustainability (or 'social acceptance') as a vital element in the widespread 'adoption' of a technology, while 'technical performance', alternatively, is considered to be a measure of 'outcome' or impact (see figure 5.2). It can be argued, however, that these two components, social sustainability and technical performance, are inextricably linked. It was observed by the author that reliable technical performance of the Grameen Shakti technologies was vital for building trust in the technology and social acceptance by the users and community. In this sense, technical sustainability sits in between the 'process' and 'outcome' evaluation categories.

Post-sales care for the SHS is ensured, for the first few years, by Grameen Shakti's repayment scheme. Any problems or maintenance needed on the SHS is brought to the attention of the field staff when they visit the customer to collect the monthly loan instalment. Almost all of the customers visited were satisfied with the timeliness of the Grameen Shakti staff visits. Interestingly, every customer at one village made a point of telling me that they chose to pay in instalments for their solar panels in order to ensure that Grameen Shakti would regularly visit. This implies that repayment options provide more benefits, such as customer security, than simply increased affordability. After the repayment is complete, Grameen Shakti offers its customers a continued repair and maintenance packages with local contractors (Grameen Shakti n.d.(h)). In all the branches visited by the author, however, the customer up-take of this contract was very low, due to the perceived reliability of the SHS. The panels themselves have a 25 year warranty (Kamal 2010, p.19) and the only regular maintenance needed is to check the water level of the battery. Repairs of the system or accessories are usually done locally, at a GTC office, which is convenient for both Grameen Shakti and the customer. In all, Grameen Shakti's SHS appeared relatively easy to install, use and maintain.

Biogas plants, alternatively, have had a history of problems in Bangladesh. Out of the 1,120 biogas plants constructed in a government run project from 1998 to 2003 for example, 53% were found to be not "functioning well" (IDCOL and SNV 2006, p.iv). Several factors have been identified as limiting the technical potential of the biogas plants, including "monsoon-flooding, high water tables especially during rainy season, and declining number of cattle per household" (IDCOL and SNV 2006, p.v). An owner of a non-Grameen Shakti biogas plant in one village, for example, had her output chamber destroyed in the first monsoonal season (as shown in figure 6.13 below). Maintenance and repairs, however, were not a sustained component in this Government project and thus the biogas plant has remained unfixed. All of the Grameen Shakti biogas plant customers interviewed, alternatively, appeared very

satisfied with their biogas plants, including their maintenance and functioning, due in large part to the repayment-maintenance scheme.[81]

Figure 6.13: An unrepaired Government built (non Grameen Shakti) biogas plant. Source: Photo by author, Bangladesh village, 2008.

Grameen Shakti's ICS design was based on one of the models developed by the Bangladeshi science laboratory BCSIR (Kamal 2010, p.19). The original funder, GTZ, had influence over Grameen Shakti's original stove choice (Gomm 2009, January 12). And, in later years, "Grameen Shakti has developed and pilot tested its own model of three mouthed stoves, which is more efficient than previous models in Bangladesh" (Barua 2007, p.11). From observations, these stoves are being built in both inside and outside kitchens. The number of stove pot holes is dependent on the customer's needs, though little else in the design can be changed without affecting the efficiency of the stove. The ICS is advertised as saving fuel and reducing cooking time. In order for this to occur the stove dimensions, such as the distance to the grate and the size and shape of the pot holes, must be accurate (Gomm 2009, January 12).

In early 2010, Grameen Shakti made a significant change to the construction of the ICS, with the primary material changing from clay to cement. "For ICS we have been trying out different materials to replace the mud and have started researching into a possible cement-based material for constructing the cook stoves and so far it seems to be working well" (Kamal 2010, p.19). The change in material itself does not aid in the technical functionality of the system. It does however, lead to faster construction and

[81] It must be noted however, that the sample of biogas customers interviewed was not random (see section 5.2.4).

more consistent results, as the cement ICS are now sold prefabricated (Kamal 2011, March 24). By mass producing the ICS from cement (at regional centres) and then selling pre-made ICS to customers, mistakes in the construction stage concerning the correct distances *etc* are less likely to occur.

It is unsurprising that this has resulted in a dramatic increase in ICS sales, as, in the past, there have been instances of ICS failing to be properly constructed, and consequently having operational problems. In Sylhet in early 2007, for example, many Grameen Shakti ICS failed due to incorrect construction, with other Partner Organisations needing to replace over 200 of Grameen Shakti's ICS (Gomm 2009, January 12). According to Dipal Barua (2009, January 13), customers were attempting to build the ICS themselves without Grameen Shakti supervision: "We were training people how to make the ICS, but then they weren't coming to us, they were going away and making the ICS themselves for 200Tk cheaper. And, unfortunately, they were not making it properly". The difficulties and time expenditure involved in the original ICS construction, as compared to the new prefabricated ICS, can also help to explain why ICS sales have increased dramatically in recent years.[82]

6.5.3 Environmental sustainability

An environmentally sustainable energy technology or project is more likely to continue to benefit communities into the future than one which disregards the local natural environment. Central to Grameen Shakti's mission and identity is the provision of renewable and environmentally-friendly energy solutions. It does so in order to provide environmental benefits for both the rural community and the broader global environment. Its three main products are specifically designed to decrease greenhouse gas emissions, and decrease the use of local natural resources. Grameen Shakti's "solar, biogas, and improved cookstoves programs reduce dependence on wood and biomass, bringing in environmental benefits" (Barua 2007, p.5).

[82] In an attempt to increase their biogas plant sales, Grameen Shakti is also considering the production of fibreglass biogas plant chambers, which can be quickly and accurately prefabricated (Kamal 2010, p.19).

The use of a solar home system decreases a household's reliance on kerosene, which reduces greenhouse gas emissions (BEN 2006, p.31) and creates a less polluted indoor air environment, as noted by customers interviewed. The SHS does not emit any air pollutants during its operational lifespan, and the silicon in the panels can be considered "environmentally benign" according to the Bangladesh Energy Network (BEN 2006, p.30). At the end of the SHS components' lifespans, however, there are potential issues concerning the disposal of the system, especially the battery, which has a relatively short, five year lifespan. "Specifically, lead-acid type batteries can pose potential health and safety risks as lead persists in the environment and in organic tissue itself" (BEN 2006, p.30). Grameen Shakti has policies in place to properly dispose of faulty or expired batteries, as detailed in IDCOL's *Policy Guideline for Disposal of Warranty Expired Batteries* (World Bank 2007, p.3). However, while the Grameen Shakti head office appears to be aware of the potential for environmental damage (Barua 2007, p.4), staff at several of the branches visited in 2008-2009 appeared to be unaware of why proper disposal was necessary, and unprepared for collection and disposal of expired batteries. As revealed in one staff member's interview, at least one branch was, in fact, instructing customers to simply bury their expired batteries.

The biogas plant is possibly the most promising of the technologies in terms of environmental benefits. Firstly, use of the plant decreases the reliance on local fuelwood supplies. This is pertinent for Bangladesh, as biomass is becoming scarcer with an increasing population and decreasing woodland (BEN 2006, p.30). In addition to this saving of wood supplies, the biogas plant can reduce the greenhouse gas emissions from decomposing animal manure. Methane gas (a highly potent greenhouse gas) is produced by the breakdown of the manure. In the biogas plant, this methane gas is captured and combusted (when cooking), converting the methane into relatively less harmful compounds.[83] Additionally, the remaining biogas plant waste-product, or 'slurry', can be used as a high-nutrient organic fertiliser to enhance soil

[83] This includes carbon dioxide, which is still a greenhouse gas, but is a considerably less potent greenhouse gas than methane.

quality. Interviews with customers highlighted a high level of satisfaction with the quality of the slurry as fertiliser.

Similarly to the biogas plants, the ICS reduces the pressure on fuelwood supplies by reducing the amount of biomass, such as fuelwood and leaves, needed for cooking. Unlike the biogas plants, however, the ICS still do require a regular supply of biomass to function. The environmental impact of the ICS, then, is dependent on the efficient functioning of the stove, and the level to which local biomass supplies are declining and need to be conserved. In terms of the ICS efficiency and its impact on biomass consumption, we cannot assume that all ICS designs and implementation projects will provide the benefits hoped for (see section 3.3.1). A recent study in Bangladesh by Alam and Chowdhury (2010, p.1954) however, found that improved cook stoves with two pot holes and a chimney (similarly to the Grameen Shakti design) are efficient in practice (not just in the laboratory), which appears to support Grameen Shakti's claim that its ICS are fuel-saving. Interviews with customers in 2008-2009 found a mixed response. As explored in the earlier section 6.4.1, while most users agreed that the ICS saved fuel, others were less certain. Furthermore, several users used their new and old cook stoves interchangeably, depending on cooking needs and fuel supply, making it difficult to determine environmental benefit.

As noted earlier, Grameen Shakti has recently gained CDM accreditation for its ICS, due to the ability of the ICS to reduce the amount of carbon dioxide produced by cooking. The level of carbon dioxide reduced was measured and tested by the CDM agencies, and independent "spot-visits" on functioning ICS are apparently carried out to ensure the continued efficiency of the stoves (UNFCC 2009b, p.4). If the ICS is not constructed properly, then the efficiency decreases and so too does the environmental benefit. Thus Grameen Shakti now, with the CDM funding, has a more direct reason to ensure that the ICS are properly constructed and functioning. This factor helps to explain why Grameen Shakti has recently moved to the prefabrication of cement ICS, as detailed above. In terms of environmental benefit, the carbon dioxide *etc* saved by using the stoves in Bangladesh is now being 'cancelled-out' in a global sense, by the pollution emitted by the international companies that buy the CDM carbon credits.

Ironically then, the ICS does not produce a global environmental benefit in terms of global greenhouse gas emissions. The stoves do however, still reduce the burden on biomass resources and reduce local air pollution if used and constructed correctly, which can be of great benefit.

6.6 Primary impacts

Apart from the process of dissemination, and measures of who, how, and how many people have been affected by Grameen Shakti's technologies, it is essential to explore the impact that the technologies (and Grameen Shakti's dissemination methods) have had on people's lives. As explored in chapter five, Grameen Shakti has maintained a primary mission which is focused on bringing the benefits of renewable energy to rural people. Throughout its publications it has referred to various manifestations of these benefits and what they entail. Most prominently though, Grameen Shakti has promoted and focused on the direct positive impacts that its energy technologies can provide through better lighting and cooking.

6.6.1 SHS impacts

The most well-known and publicised benefit of the SHS is the provision of electric lighting. This solar electric lighting is considerably brighter and cleaner than the traditional alternatives, such as the kerosene lamp. All of the users interviewed by the author indicated that the increased brightness at night was a considerable life improvement. The users quoted the improved light quality, for approximately four hours per night, enabled the household to more easily perform night-based activities, such as children's study, walking to outdoor lavatories, *etc*. Interestingly, though, in many of the households with smaller solar panels (and thus only a few lamps), a lamp for the kitchen was not prioritised, despite light being needed in this area for food preparation and cooking. Questions concerning this did not result in a clear answer for why this was the case, with the users (female) seemingly confused as to why the

kitchen should be prioritised. This is a broader issue (concerning the value of 'women's work') that we will return to in chapter eight.

Apart from better lighting, the solar home system also provides electric power for small appliances such as mobile phone rechargers and TVs. These are uses for which no traditional alternative exists. They are only beneficial, however, for those households who can afford the appliances, and find them suitable for their needs. For example, most houses visited by the author had a mobile phone recharger, while approximately half owned a TV. Several owners were not satisfied with the amount of charge available from their SHS, wanting to be able to run several fans and larger colour TVs, which were beyond the means of their systems. According to Barua (2009, January 13), SHS customers living near areas with grid electricity sometimes become frustrated that the SHS cannot deliver the same amount of charge. The SHS, however, do not suffer the frequent power outages that the grid experiences, which was considered a positive factor by most users.

For small businesses, most owners used the SHS for mobile recharging and lighting, with some also able to power a small TV. The electric lighting at night was considered a positive by all shopkeepers interviewed. According to one group of shopkeepers (all male), the SHS enabled them to keep their shops open until 10-11pm at night, with TV and movie-viewing on the weekends. They appreciated the extra business and the social environment that the SHS provided. When asked how their families felt about them being away for so many more hours per night and weekend, the customers joked that their families were glad to have them away. Social impacts of the SHS, such as this, were not measured by Grameen Shakti, which had no regular surveying of customers on the technology's impact on their lives.

6.6.2 Biogas plant impacts

The biogas plant has several potential impacts for rural people, primarily concerning improved cooking and fertilising. "Biogas as a clean fuel is quicker and easier for cooking than biomass. It enables to save approximately 1 hour time per day per family

mainly due to the reduction on time used for collecting biomass, cooking food in the household and cleaning utensils" (IDCOL and SNV 2006, p.v). While the time-savings from use of the biogas for cooking could not be quantified by the users interviewed, most did state that cooking with biogas was quicker, cleaner and easier than the traditional stove. Several customers also mentioned, however, that the daily collection and shovelling of animal waste into the biogas plant input chamber was a somewhat time-consuming and unpleasant task. While the biogas plants visited by the author appeared in good working order, this unpleasant task is a potential impediment to positive impact, not only in terms of personal comfort, but also in terms of biogas plant performance. In an earlier Government project, for example, most of the biogas plants were found to be "under-fed" (IDCOL and SNV 2006, p.iv). This was in part also due to people needing to sell their cattle or chickens.

The biogas plant also produces slurry which can be used by the owner as a highly nutrient organic fertiliser. For the biogas plant owners interviewed who were farmers, with cows or chickens and some agricultural land, this fertiliser was considered a real boon. One small commercial fishery bought a Grameen Shakti biogas plant specifically in order to feed the fish the slurry from the biogas plant output. For this customer, the "hidden cost" of the biogas plant was the number of cows or oxen needed to produce sufficient slurry. Most customers, however, appeared aware that the biogas plant needed sufficient livestock waste to operate, and were satisfied with the benefits they acquired from the fertiliser and gas cooking.

6.6.3 ICS impacts

Similarly to the biogas plant, the ICS seeks to replace the traditional cook stove, and hence provide positive impact by removing the harms associated with traditional cooking. The Grameen Shakti ICS removes most of the smoke from the cooking area via a chimney, providing a cleaner and safer environment. Most of the female ICS users interviewed by the author in 2008-2009, pointed out the chimney as a particularly desirable component of the ICS. Most commented that cooking was generally cleaner, with less soot on the pots and less air pollution (though the chimney did need

occasional cleaning). Most women were acutely aware of the difference the ICS made to their comfort level while cooking, with a lessening of aggravated eyes and throat. Most seemed only vaguely aware of the long term health benefits of the ICS.

The ICS is also advertised as reducing the amount of fuel needed to be collected, and reducing the amount of time needed to cook the food. As noted in section 6.5.3, there was a mixed review by users on this front, with some users appearing well adapted to their ICS and others less familiar or comfortable with the ICS. Some users mentioned that their ICS was not suitable for cooking small meals, or meals which needed low heat for a long period of time. While this issue has since been somewhat resolved, with the 3-pot ICS (the third pot-hole being suitable for cooking smaller meals), this 3-pot design does not help customers with older ICS, or poorer customers who cannot afford the more expensive 3-pot ICS. As the new, prefabricated cement ICS were not being produced during my field research, I cannot report here on customer reactions to the benefits of the new ICS. As the design has not changed, the end use and benefits should not significantly change.

6.7 Additional Impacts

A number of primary and secondary benefits have regularly entered the Grameen Shakti dialogue. Grameen Shakti's primary impacts are expected to occur simply as a consequence of the energy technology use, as explored above in section 6.6. Grameen Shakti also, however, promotes some additional impacts that it creates through its choice of technologies, its dissemination process, and additional campaigns. As promoted by the previous Managing Director, "Grameen Shakti sought solutions that empower women, the disadvantaged, create jobs, facilitate rural development and especially protect the environment" (Barua 2008, p.2). Empowerment of women, rural employment and income generation, in particular, are regular features of Grameen Shakti's claims for additional impact. It is these dimensions which will now be explored.

6.7.1 Female Empowerment

With the opening of Grameen Technology Centers (GTC) in mid-2000s, Grameen Shakti began a new focus on women as employees in non-traditional areas of the workforce (Grameen Shakti n.d.(h)). The GTC, stationed across Bangladesh, are deliberately staffed only by female engineers. In all four of the GTC visited by the author in 2008-2009, the staff did comprise of 3-4 young female engineers. GTC staff have the role of training technicians (particularly for the maintenance and construction of SHS components) and training customers on the use of their technologies. Grameen Shakti advertises that it is particularly marginalised local women (such as divorced women) who are to be targeted for the technician training and employment (Grameen Shakti n.d.(h)). This commitment was affirmed by the GTC engineers and technicians interviewed in 2008-2009.

While interviews with GTC engineers and GTC technicians did appear to support Grameen Shakti's claim to employ disadvantaged women for solar construction and assembly, their involvement in construction of ICS and the SHS after-sales maintenance was not so evident. Firstly, as stated earlier, in all of the branches visited the up-take of the after-sales maintenance contracts was low. Customers interviewed stated that the contracts were unnecessary and expensive, considering how little maintenance was needed for the SHS unit. Secondly, there appeared to be cultural difficulties with women travelling from house to house for either ICS construction or maintenance. This cultural element also had consequences for employment of women in Grameen Shakti branches.

Outside the GTC, female employment is not as well embraced by Grameen Shakti. While female employees are not rejected, neither are they encouraged or supported. In the Head Office, there appeared to be only one or two female employees present (including the front desk secretary) out of a work force of approximately twenty to thirty people. The vast majority of the upper management and branch staff in Grameen Shakti are male, and over 90% of the staff in the branches visited by the author in 2008-2009 were men. As noted by one staff member, while women were not

discouraged from becoming branch field staff, they were often restricted by Bangladeshi norms against women travelling alone from house to house for Grameen Shakti sales. As of 2009, Grameen Shakti did not appear to have any plans to address these gender divisions. For example, out of a class of approximately 100 new recruits in training in Dhaka (in January 2009), only young men were observed to be present. This is an issue that will be further analysed in chapter eight.

6.7.2 Rural development

In addition to addressing energy needs, Grameen Shakti also claims to impact rural development through the income-generating potential of its technologies, and through the employment opportunities the organisation initiates. As explored above, and observed in all branches visited by the author, Grameen Shakti employs rural people as sales assistants, as labourers and masons (with the biogas plant and ICS construction), and as GTC technicians. Grameen Shakti also claims that its technologies help to create more rural jobs (outside of Grameen Shakti), though this was not observed during field research and cannot be substantiated.

Grameen Shakti has also advertised the income-generating ability of solar electricity as one of the benefits of their SHS technology. In the home, for example, Grameen Shakti promotes the ability of women to start new income-generating activities under the light of their solar panel, such as “basket making, net weaving, tailoring” (Barua 2001, p.206). None of the SHS users interviewed by the author in 2008-2009, however, were using their solar lighting or electricity for home-based income-generating purposes. This suggests, then, that this may not be a widespread or common benefit of the SHS.

All three technologies are also promoted as being able to create more income in small rural businesses. In terms of business, the SHS can provide lighting for a shop, the biogas plants can produce organic fertiliser for sale, and the ICS can be used for more efficient cooking for food stall vendors. As explored above, most market shop keepers interviewed by the author, including tailors, mechanics and pharmacists, stated that the SHS lighting allowed them to stay open for longer and attract more customers.

Many SHS business owners also appeared to be creating income by renting out one or two lights or mobile charge, as explored in the section above.

In the market place, one or two modified ICS were also observed by the author, for use in market food stalls. The owners interviewed said the ICS enabled more efficient cooking and thus more profitable business. The number of ICS being used for business purposes, however, appeared to be very low in comparison to the home-based ICS in the branches and villages visited. Some biogas plant owners in small and medium-sized commercial farms were observed to sell excess gas to neighbours. Grameen Shakti also promotes the ability of biogas plant owner to sell the waste product of their plant, the slurry, as organic fertiliser. However, as noted above, Grameen Shakti's attempts to set up a contract with local companies to buy the slurry from biogas plant owners have been slow, possibly due to the low numbers of biogas plants in operation.

6.8 Conclusion

The above analysis of Grameen Shakti's activities, in terms of the dissemination, targeting, affordability, sustainability and the impact of its technologies, appears to have provided several interesting clues as to Grameen Shakti's ability to address energy development in rural Bangladesh, and its priorities in doing so. Some trends can now be discerned in terms of which customers Grameen Shakti is most concerned with serving, which technologies it is giving preference to, and why. A comprehensive dissection of the data presented above, and these trends, will now be presented in chapter seven.

Chapter 7 – Discussion:

Grameen Shakti's ability to address market failure and balance a double bottom-line

7.1 Introduction

This chapter will attempt to draw together the various threads which emerged in chapter six. In doing so, the chapter will present a summary of the successes and failures which Grameen Shakti appears to have experienced in its attempts to address energy needs in rural Bangladesh. These results will invariably lead to questions concerning how it has performed as a social enterprise, especially in regards to balancing its double bottom-line. The chapter will attempt to place these concerns within the broader Bangladeshi rural market context, with an analysis of exactly what can or should be expected from a social enterprise operating in a 'developing' market environment.

By analysing Grameen Shakti's activities in this context, we can also begin to appreciate the limitations of the evaluation criteria used to assess the case study in chapter six. As these criteria were developed using Grameen Shakti's own objectives and measures of success, they can provide insight into Grameen Shakti's and Yunus' conceptions of development and social enterprise. In order to draw a complete picture of our case study, though, it will be argued that we need to extend beyond these criteria, and their focus on technological solutions to rural energy market failures, to explore the political dimensions that they neglect.

7.2 Summarising the data analysis results

In chapter six, several evaluation criteria were used to assess Grameen Shakti's ability to address energy needs in rural Bangladesh. Three themes, in particular, emerged in

this assessment: Grameen Shakti's success in disseminating the solar home systems; its inconsistencies in disseminating the biogas plants and improved cook stoves; and its difficulties in reaching the poorest Bangladeshis. In the sections below we will explore these themes, drawing evidence from the various relevant evaluation results presented in chapter six.

7.2.1 Wide-spread, sustainable dissemination of SHS

As demonstrated in the preceding assessment of its 'technology dissemination', Grameen Shakti's solar home systems (SHS) dissemination approach has enabled it to deliver electricity to over a million rural households. In comparison to both its own sales targets and the sales figures of other Partner Organisations, documented in the section 6.2.1, Grameen Shakti's SHS sales have been very high, and appear to confirm its claim to have built a successful dissemination program for solar-electric technology in rural Bangladesh. This has gained it many international accolades and awards over the years, including: the Energy Globe Award in 2002 and 2008; the European Solar Prize in 2003 and 2006; the Ashden Award in 2006 and 2008; the Right Livelihood Award in 2007; and the Solar World Einstein Award in 2010 (Grameen Shakti n.d.(i); Kamal 2010, February 24). The reason behind these high sales figures and awards, as documented throughout chapter six (and summarised below), appears to be Grameen Shakti's locally-embedded, long-term, customer-focused strategy.

Observations recorded in the 'affordability' and 'sustainability' evaluation categories suggest that key contributors to Grameen Shakti's SHS success are its low interest loans and its after-sales services. A central problem with previous attempts to introduce solar technology, by various actors around the world, has been its prohibitively high cost (Yunus 2010). Grameen Shakti's soft credit loans, along with the gradual decrease in solar manufacturing costs, appear to have made the SHS affordable for many rural Bangladeshi households (as documented in section 6.4.2). Importantly, Grameen Shakti's loans not only increase affordability, but also help to ensure that the SHS product continues to function properly. That is, observations recorded in the 'technical sustainability' category suggest that the monthly loan

collections by Grameen Shakti staff, at the customer's residence or business, have generally ensured that technical problems are promptly dealt with (at least for the first few years). This after-sales customer service is also an essential component of Grameen Shakti's success in terms of its 'social sustainability', with many customers citing the loan repayment option as vital to their trust in both the SHS technology and Grameen Shakti itself.

To further support its 'social sustainability' and 'dissemination' objectives, Grameen Shakti also appears to have gone to lengths to familiarise rural Bangladeshis with both its technologies and its brand; doing so, primarily, by embedding its operations within the rural communities it services. For example, in section 6.5.1 it was shown that Grameen Shakti has developed a network of local branch offices, which were observed to hire and contract a proportion of their staff from the local area. Assembly of several SHS components are completed in the Grameen Technology Centers, which were observed to hire local women and provide training courses more broadly in the community. As explored in section 6.7, these activities also helped Grameen Shakti fulfil its 'additional impact' objectives of increasing female and rural employment. Furthermore, training provided to customers on the correct care of their systems appears to have helped ensure that they feel comfortable and confident with the solar technology (apart from some instances of neglected maintenance of battery water levels *etc*), effectively linking Grameen Shakti's 'technical' and 'social sustainability' objectives. Finally, public demonstrations and local advertising were evident in most villages, building brand recognition and familiarity with the technologies (though the extent of advertisement varied).

Interestingly, these results appear to indicate that there is compatibility between the business practices employed by Grameen Shakti and its social aim of delivering a sustainable, "popular" solar energy technology (Yunus 2010). Firstly, its financial objective to increase its reputation and sales has made the SHS product more affordable and reliable, via Grameen Shakti's soft loans, training and after-sales services. Similarly, its financial objective to increase and secure its customer base has led Grameen Shakti to localise its services, with branches, employment, construction

and advertising. Grameen Shakti's business-like approach to the dissemination of SHS appears to have produced a more sustainable and wide-reaching result in rural Bangladesh than previous Government attempts to introduce new technologies through short-term projects (see below). Unlike Government projects which answer to Ministers, and unlike traditional NGO projects which answer to donors, it is the satisfaction of the SHS customer that directly affects Grameen Shakti's financial and social 'success'. Thus it is the SHS customers, and potential customers, which are the focus of Grameen Shakti's efforts. This, it can be argued, has been a central reason for Grameen Shakti's success, and adds weight to the argument that social enterprises are particularly suitable for delivering energy services in developing countries.

7.2.2 Inconsistencies in dissemination of cooking technologies

In contrast to the SHS, the results in chapter six suggest that Grameen Shakti has not been as successful with the dissemination of its cooking technologies. Data analysis in the 'dissemination' category demonstrated that sales of the improved cook stoves (ICS) and biogas plants have not been as high as predicted or desired by Grameen Shakti (shown in sections 6.2.2 and 6.2.3). It was noted that this difference in sales figures was partly due to the SHS product being more established in the Grameen Shakti branches than either of the other technologies. However, a comparison of the *new* branches, in section 6.2.4, still showed a large statistically significant difference between the sales of the SHS and either the biogas plant or the ICS (in 2008). These low sales rates were shown to have consequences for both Grameen Shakti's 'primary impact' objective of disseminating energy technologies broadly across Bangladesh, and its 'additional impact' objectives of improving women's health and drudgery in the kitchen.

In the 'sustainability' category, Grameen Shakti's low biogas plant sales figures were partly explained by the failure of past Government initiatives, showing again how 'social sustainability' and 'technical sustainability' are linked. That is, as noted by Barua (2008, p.3), "the majority of biogas plants previously constructed under government initiative failed, creating huge distrust among rural customers". Observations and

interviews reported in chapter six, however, suggest that Grameen Shakti was generally more focused on promoting its SHS products than it was on regaining the trust of local people in the biogas technology. As explored in section 6.5.1, public banners and other promotional material were observed to be more prominent for the SHS than for the biogas plants, or the ICS, in village centres. Significantly, it was also observed that more staff incentives (*i.e.* unofficial bonuses or gifts) were given to field staff for their SHS sales than for their ICS or biogas plant sales. In sum, observations from field work in 2008-2009 indicate that the Grameen Shakti staff were encouraged to consider SHS as the primary product to focus on, with the biogas plant and ICS as the secondary products.

Support for this conclusion can be gained by analysing the recent trends in ICS sales, as reported in section 6.2.3. The year 2010 saw a change in Grameen Shakti's attention towards the ICS product, with the Head Office spear-heading a new approach to ICS production and construction. ICS-dedicated field branches were opened, ICS-specific staff were trained, and Grameen Shakti invested in research to find more reliable and cost efficient ICS manufacture techniques (Kamal 2010, February 24; Kamal 2011, March 24). Communication with Grameen Shakti senior management (post field work) revealed that these changes were directly attribute to the gaining of accreditation from Clean Development Mechanism (CDM) and the carbon offset agreement between Grameen Shakti and J P Morgan's 'Climate Care' company (Kamal 2011, March 24; UNFCCC 2009). As a consequence of Grameen Shakti's increased interest in the cook stove's dissemination and design, the ICS sales grew rapidly (as demonstrated in section 6.2.3), from 46,000 total ICS sold by the end of 2009, to 147,000 ICS sold in 2010 alone. These new observations imply that lack of customer demand for better biomass stoves was not necessarily the cause of the low ICS sales in 2008, but rather that Grameen Shakti was not focusing on ways to better promote and construct the product.

7.2.3 Difficulties in reaching the poorest

Along with initial difficulties in disseminating the ICS and biogas plant technologies, the results presented in chapter six also indicate that Grameen Shakti was having difficulties reaching the poorest Bangladeshis. This finding is most evident in the comparison of sales across different Bangladeshi districts in the 'targeting' category (section 6.3.2). The multivariate analysis of the Grameen Shakti sales revealed a statistically significant relationship between product sales and a district's wealth. It was found that SHS and ICS sales in 2008 were highest in the districts which had more households with moderate incomes, and sales were lowest in the poorest districts.

For the SHS, it was proposed (in the 'targeting' section) that this result could be somewhat expected, as the solar technology is relatively expensive. People in the poorest districts of Bangladesh would be generally unable to afford the standard SHS packages offered by Grameen Shakti, even with Grameen Shakti's soft credit loan option. However, as explored in the 'affordability' category in section 6.4.3, Grameen Shakti also offers pro-poor SHS packages, designed for those who are less financially secure. If Grameen Shakti was promoting and actively encouraging the uptake of pro-poor SHS options in the poorest districts, then the relationship between SHS sales and district wealth would not be so statistically significant and robust. The field research observations, documented in section 6.4.3, suggest that Grameen Shakti was indeed not promoting or properly targeting its pro-poor SHS options. The mini solar panels, for example, did not appear to be promoted to, or bought by, the poorest in the branches visited. These results imply then, that in 2008, Grameen Shakti was not targeting the poorest districts or households for its SHS sales.

The ICS multivariate analysis appears to support a similar interpretation of the sales trends. In the initial assessment of the ICS multivariate results (in section 6.3.2), it was unclear why the ICS sales should be lowest for districts which are poorest, since the ICS are relatively inexpensive and potentially affordable to all. An answer to this paradox, however, also presented itself in the 'affordability' category (section 6.4.3), as some of the poorest villagers claimed that the ICS cost was still beyond their means. For these

villagers, the repayment option was essential. However, it was noted that in many villages the Grameen Shakti branch had stopped offering the repayment option for the ICS, claiming it was not needed, wanted or "worth it". This implies that affordability of the ICS for the poorest was not a priority in these Grameen Shakti branches. In section 6.4.3 it was also noted that the pro-poor option for ICS (*i.e.* a cheaper ICS with a single oven) did not appear to be well publicised to the poorest households in the regions visited. If these practices, of not offering repayment or pro-poor ICS options, were wide spread across most of Grameen Shakti's branches, then this could help to explain why the ICS sales were so low for the poorest districts in 2008.

Through observations recorded in the 'targeting' category (in section 6.3.3), it also became apparent that in 2008 Grameen Shakti was not promoting or advertising its products to Grameen Bank members. Despite the ties between the two organisations, and their close branch proximity in some of the villages visited, there appeared to be little communication between the Grameen Shakti and Grameen Bank branch staff. Nation-wide correlations presented in section 6.3.3 confirmed that this is part of a wider trend of divergence between Grameen Shakti and Grameen Bank. That is, the Grameen Shakti sales in 2008 were found to be lowest in the districts where Grameen Bank was most present and active. As it was also shown that Grameen Bank membership is highest in the poorest districts, this inverse correlation (between Grameen Bank membership and Grameen Shakti sales) can be somewhat explained as Grameen Shakti being less interested in targeting the poor. Observations documented in section 6.4 confirmed this, with several Grameen Shakti staff stating that the Grameen Bank members generally cannot afford the standard Grameen Shakti products. These findings appear to support the hypothesis above, that (at the time of field research in 2008-2009) Grameen Shakti did not appear to have an adequate strategy to reach the poorest.

7.2.4 Drawing the threads together- Is Grameen Shakti prioritising its financial goals?

The analysis presented above has demonstrated both Grameen Shakti's success in using a business strategy to disseminate SHS to rural Bangladeshi households, but also its difficulties in extending this approach to sell other technologies, and in reaching the poorest households and districts. One possible factor in an explanation for these trends, it can be conjectured, is financial. That is, it can be argued that Grameen Shakti has focused more on the generation of revenue (by selling the SHS to richer customers), than on the dissemination of the technologies with less revenue-raising capabilities (*i.e.* the biogas plant, the original ICS, and the pro-poor technology options).

While the biogas plant is a relatively expensive product, the revenue from its sale is not substantial in comparison to the effort invested by Grameen Shakti. The amount of staff time consumed with the planning and construction of the biogas plant, for example, did not appear to be adequately factored into the cost of the product. The same is true for the inexpensive ICS. In many of the Grameen Shakti branches, I was told that they were making a loss from the ICS sales, especially when staff hours for supervising construction were included. Most tellingly, in Grameen Shakti's Annual Financial Review for 2007, the contribution of both the ICS and biogas plant sales to Grameen Shakti's total revenue was negligible (see figure 7.1) (HYC 2008, pp.3, 12). As indicated in the pie chart below, Grameen Shakti's financial sustainability was almost entirely reliant on the sales of SHS. Indeed, the ICS sales made a negative contribution of approximately -0.5% to sales revenue in 2007 (HYC 2008, pp.3, 12). Under these circumstances, for a social enterprise which is attempting to financially 'break even', it is unsurprising that Grameen Shakti has prioritised the sale of SHS.

As noted above, however, as of 2010 this trend changed for the ICS. It can be conjectured that the new CDM funding for the ICS improved the financial viability of the product, enough to justify Grameen Shakti investing its resources in upgrading the design and dissemination of the ICS technology. Consequently, 2010 saw a dramatic

increase in the ICS sales figures.[84] This scenario, of increased promotion and attention to the ICS with the onset of new funding, supports the claim that Grameen Shakti's sales promotion is, at least somewhat, driven by financial concerns. Similarly, it can be argued that Grameen Shakti's targeting of relatively wealthier districts and households, and neglect of the poorest, is based on financial reasons. Simply, the poorest households will have the most difficulty in affording Grameen Shakti's technologies, and the pro-poor options are the least financially beneficial for Grameen Shakti to sell.

While this financial dimension is certainly not the only factor influencing Grameen Shakti's choices and actions (as explored in the following chapter), it does appear to provide a plausible explanation as to why Grameen Shakti has not disseminated its technologies to the poorest Bangladeshis, and why its initial sales of its ICS and biogas technologies were so low. This, inevitably, leads to important questions concerning whether Grameen Shakti, as a social enterprise, is adequately balancing its double bottom-line. In order to answer this question we need to revisit Grameen Shakti's mission objectives (as presented in section 4.3), and, importantly, consider the market context in which it is attempting to deliver these goals.

Figure 7.1: Percentage each product contributed to Grameen Shakti's financial bottom-line in 2007, in terms of the revenue raised from sales and interest (*i.e.* "service charge") (HYC 2008, p.12), minus sales expenses (HYC 2008, p.3). The ICS

[84] Unfortunately, follow-up financial and district-wise sales data was not available for comparison.

resulted in a 0.5% loss in revenue in 2007. Source: Grameen Shakti's 2007 Financial Audit (HYC 2008).

7.3 Delivering a double bottom-line in a challenging market environment

The above analysis and discussion of Grameen Shakti's activities in Bangladesh have raised questions about its ability to balance a double bottom-line. We have seen that Grameen Shakti appears to be delivering on many of its social aims concerning sustainable electricity provision, but was not as diligent with disseminating its less revenue-raising products or targeting its less wealthy potential customers. It is hypothesised that this was due, in part, to Grameen Shakti prioritising its financial goals. The financial report referenced above, however, implies that if Grameen Shakti had not prioritised the sale of its standard SHS units, and gained revenue from this activity, then it would have found itself in serious financial difficulties. While Grameen Shakti promotes its pro-poor options and its cooking technologies as important components of its social objective (see section 4.3), it could be queried whether, in the Bangladeshi context, this is too high an expectation. As we will now explore, balancing the double bottom-line in a 'developing' market environment takes on an extra level of difficulty.

Most developing countries have complex and extensive informal markets, and multiple market and state failures in the formal sector (Sawada 2006). Lack of transport, infrastructure, telecommunications and legal regulations, for example, pose formidable barriers to the 'proper' functioning of the market, as commonly seen in rural areas (Valentinov and Baum 2008, p.459). The resulting "high transaction costs and risks, weak information flows, and weak institutional environment" make buying and selling of goods and services expensive or difficult (Dorward *et al.* 2005, p.3). Multiple market failures in Bangladesh, for example, have resulted in many basic goods and services, such as cooking fuel, water, electricity and plumbing, being often

unavailable to poor or remote rural communities. Failures or deficits which the state has also failed to adequately address.

In the Bangladeshi context, therefore, there is a greater need to address a broader range of problems than is usually encountered in more developed economies. Yunus' Grameen family, for example, is dominated by social enterprises that address fundamental market and state failures which generally do not occur in western countries (see section 2.4.1 for references). The failure of the Government to provide universal primary schooling, for example, has been the motivation for Grameen Shikkha to set-up rural and urban slum schools. The lack of banking facilities offered by businesses to poor rural families, similarly, has been taken up by microfinance organisations such as Grameen Bank. The lack of telephone services and infrastructure has meant that Grameen Phone was in a unique position to service thousands of rural customers. And, for Grameen Shakti, the challenge is to supply energy services to the vast majority of rural Bangladeshis who are currently without electricity and safe cooking options.

Energy market failures, similarly to these other market failures in rural Bangladesh, are endemic, affecting a large proportion of the population. Within this population there are those who are hardest to reach, due to physical isolation, poverty, discrimination, *etc.* We could conceptualise, then, there being two levels of market failure in developing countries like Bangladesh: 'basic' market failure, and 'marginalised' market failure. 'Basic market failure' will be used to refer to the inadequate provision of basic goods or services for the majority of a population, whereas 'marginalised market failure' will refer to inadequate goods or services for marginalised areas or people within the broader population. It is this 'marginalised' market failure which most closely resembles the 'social' market failure which social enterprises in western countries are expected to address (see section 2.3.1). In the complex market environment of developing countries like Bangladesh alternatively, both 'basic' and 'marginalised' market failures are present, and in need of solutions.

The consequences for Grameen Shakti, of operating in an environment where there are multiple market failures which affect a large proportion of the population, are two-fold. Firstly, maintaining financial self-sustainability will be especially difficult; and secondly, the demand will be higher to solve the 'basic' market failures of the majority, rather than the 'marginalised' market failures of those on the margins or living in the periphery. These two factors, it can be argued, are particularly informative in explaining Grameen Shakti's activities and the trends found above. Consequently, we can ask: Due to the difficulties involved in servicing disadvantaged Bangladeshis, it is perhaps unrealistic to expect a developing country social enterprise to financially break-even while attempting to address a 'marginalised' market failure?

Grameen Shakti appears to be aware of its difficult position; as do some of its funders. "To some extent, the goal of reaching the poor has been moved out of the spotlight, at least for a while. The more articulate agencies, such as Grameen Shakti, admit that they sell to the financially less-challenged too, citing (a non-existent) crosssubsidization and everyone's right to clean, modern energy as their pretexts" (World Bank 2004b, p.40). According to Grameen Shakti's General Manager (now CEO) Abser Kamal (2008, December 24), Grameen Shakti has never claimed to exclusively focus on this 'marginalised' energy market failure: "Grameen Shakti is different to Grameen Bank [which promotes itself as serving only the poor]. It services all people, both rich and poor".

Thus the inconsistencies in its pro-poor option and targeting, while still problematic, do not undermine Grameen Shakti's primary mission objectives. Indeed, according to Dipal Barua (2009, January 13), Grameen Shakti has different strategies for benefiting different income groups, including the poorest:

> We aim to provide for all people for their living needs. If someone buys a house and says to themselves, I need light, then they can go to Grameen Shakti and buy solar. If the person says, I have one or two cows, we would say to them to take a loan and buy one or two more cows and get a biogas plant. If the person is a poor person and says, I don't have the money to buy solar or cows or biogas, then we say to them, buy an ICS. If the person

> comes to us and says, I have nothing - I have no money, no food, no future - then we will say to them, come and get training at the GTC and become a builder of ICS or solar components.

The scenario that Barua describes here, however, does not solve the energy needs of the poorest, other than to promote a form of energy development 'ladder' to climb.[85] This is reminiscent of the 'energy ladder' solution to energy poverty (in section 3.2.3); though, importantly, it does not assume that all people should 'leap frog' to the top of the ladder. It does, however, assume that rural people's energy problems can be solved by addressing economic issues of market failure and financial disadvantage in the market. This perspective has, arguably, influenced Grameen Shakti's choices over how to approach energy issues in Bangladesh, and thus, how it measures its own success.

7.4 Beyond solving market failures

The above analyses and discussions of Grameen Shakti's activities have raised some interesting and pertinent questions concerning the potentials and limitations of social enterprises in developing countries, especially in regards to their ability to address market failures. The concept of market failure, however, is deeply embedded with neoclassical economic assumptions about what, where and how the market should perform in society. As noted in chapter two, Yunus himself found this term problematic.

Yunus (2007a, p.18) argued that so-called 'market failures' are, more accurately, reflections of the underlying inadequacies in the current capitalist conception of market institutions. In particular, he criticised the narrow capitalist definition of the economy which only allows for one-dimensional, profit-oriented businesses (see sections 1.2.3 and 2.4.2 for further elaboration). By allowing entrepreneurs to express their desires to contribute to society, and pursue a social bottom-line, (that is, by

[85] That is, Barua appears to suggest that the poorest should progress from basic employment, to ICS ownership, to biogas plant ownership, and finally to SHS ownership.

creating social enterprises) we have a ready answer to how to create functioning markets in the more difficult environments. Social enterprise, according to Yunus, is not a temporary solution to a peripheral 'market failure', but rather the central and permanent means to address the less profitable ventures which are neglected by traditional businesses.

Dipal Barua (2008), for example, has touted Grameen Shakti's approach to energy development in rural Bangladesh as a better alternative to either aid programs or profit-focused businesses: "Village electrification was considered the domain of government programs, development aid, and industry efforts. Many of them left a legacy of inefficiency and squandered subsidies. Grameen Shakti in contrast demonstrated how a market-based approach could flourish in underdeveloped areas and solve social problems". As exemplified in Grameen Shakti, and reflected across the Grameen range of social businesses in Bangladesh, Yunus' social enterprise solutions are attempting to sustainably provide the goods-and-services that businesses have neglected, by focusing on social (rather than personal financial) objectives.

In the radar graph below (figure 7.2), the six Grameen social businesses displayed are those described in section 2.4.1. Their distribution across the social enterprise hybrid space, especially their skew towards high 'market involvement' and 'business status quo' (*i.e.* their traditional business buying-and-selling processes of operation), highlights how their role is, primarily, in addressing market problems in rural Bangladesh, via market processes. Due to the fundamental and widespread basic market inadequacies described above, the focus of the Grameen social enterprises on providing essential goods-and-services is a justifiable response.

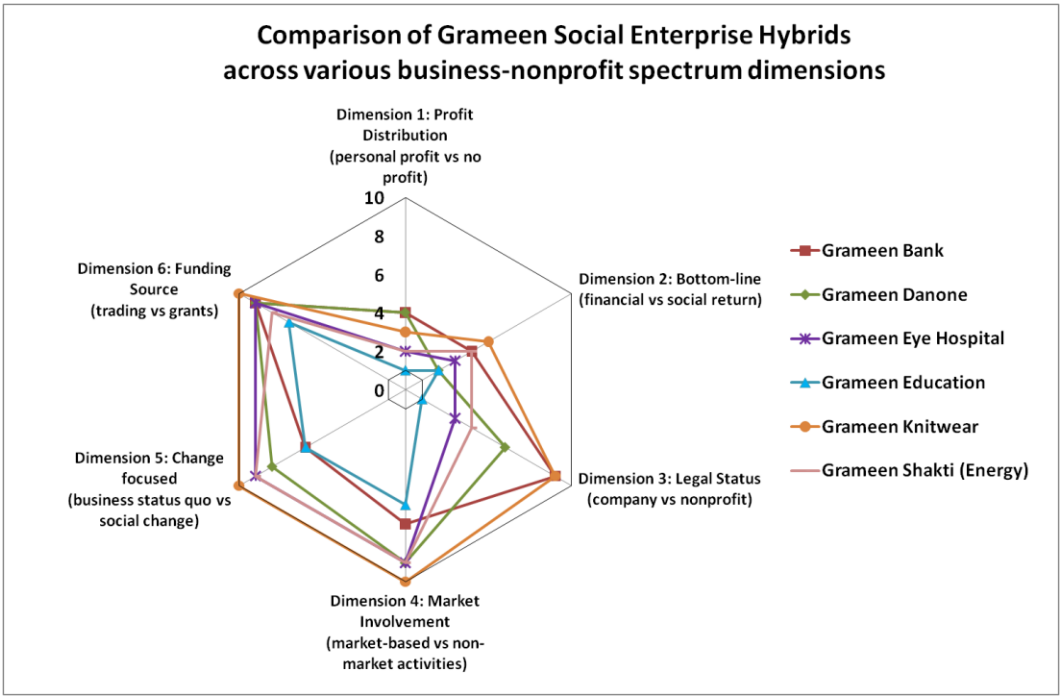

Figure 7.2: Radar graph comparing Yunus' Grameen social businesses, all of which are skewed towards market involvement and processes, with the aim of social return without personal profit.

Grameen Shakti's market-focused approach appears to be a reflection of the under-serviced and under-developed market conditions in which it developed. However, beyond the market context, there are also other important factors that may have influenced the social enterprise. That is, Grameen Shakti's structure and choices (specifically, its focus on the successful dissemination of its energy technologies) are also likely to have been shaped by political and social norms, ideologies, structures and actors.[86] It is these dimensions which have not yet been explored.

In chapter six, the evaluation focused on assessing Grameen Shakti using its own mission criteria. Thus the focus has been, primarily, on sales figures and dissemination

[86] For example, the radar graphs also show us that these Grameen social enterprises are skewed towards more socially-oriented goals (rather than profit making), with any profit that is generated not being used for personal gain. This reflects Yunus' definition of a social business as "non-dividend" (see section 2.4.1), but it also possibly reflects the development-oriented (rather than profit-oriented) entrepreneurial norms that exist in rural Bangladesh due to the historical prevalence of local nonprofit NGOs in this arena. The skew of the Grameen social enterprises towards more business-like revenue sources (rather than funding through grants), similarly, may be a reflection of Yunus' definition of a social business as "non-loss", but may also reflect the funding environment in Bangladesh. This funding environment, along with other significant political factors, will be further discussed in chapter eight.

rates, which Grameen Shakti uses to demonstrate its ability to solve energy technology market failures in rural Bangladesh. This is supported by the WHO's evaluation criteria for a household energy project, with its focus on technology dissemination, market development and measurable outcomes (see section 5.3.2). There is debate in the literature, however, over whether the WHO has a neoliberal orientation when it comes to addressing health issues in developing countries (see Navarro 2004). While analysis of the WHO's development approach is beyond the scope of this thesis, the parallels between Grameen Shakti's and the WHO's criteria for 'successfully' addressing energy poverty do demonstrate the market-focused orientation of Grameen Shakti's approach to assessing its own role in solving energy issues.

In our analysis thus far we have focused on Grameen Shakti's 'success' in resolving market problems, rather than its attempts to grapple with the political issues which reinforce energy poverty in rural Bangladesh. Without sufficient analysis of how Grameen Shakti deals with the complex socio-political issues surrounding energy development (identified in section 3.5) however, we are arguably gaining an incomplete picture of Grameen Shakti's ability to provide an effective development alternative for rural Bangladeshis. And without sufficient analysis of the socio-political environment in which Grameen Shakti exists, we are also, importantly, side-stepping fundamental questions concerning the political actors and ideologies which have influenced Grameen Shakti's choices over how to address and assess energy development.

In the following chapter, then, we will explore the underlying power relations between Grameen Shakti and its customers, and Grameen Shakti and its supporters, in the broader Bangladeshi and international political environment. This will help to illuminate some of the more contentious and complex dimensions of Grameen Shakti's role in energy development in rural Bangladesh. Exploration of these dynamics, it will be seen, is helpful for understanding the trends and results reported here, and for creating a better understanding of the potential of social enterprises more generally.

7.5 Conclusion

This chapter has attempted to draw out some central themes from the observations and data analysis of chapters six. It was argued that while Grameen Shakti has in some ways fulfilled its objective of creating popular, sustainable lighting and electricity energy solutions for rural Bangladeshis, its dissemination of cooking technologies has been less consistent, as has its concern with reaching the poorest. It was queried, however, whether Grameen Shakti's success in delivery of solar-electric technology to mainstream rural Bangladeshis is perhaps all that could be reasonably expected of a social enterprise which is trying to stay financially viable in a difficult market environment.

Fundamentally, though, this assessment, having been based on Grameen Shakti's own criteria for success, is insufficient for a comprehensive assessment of its activities. That is, thus far we have primarily focused on the success of Grameen Shakti in addressing rural energy market issues. Without proper understanding of the underlying political dynamics of energy poverty in Bangladesh, and Grameen Shakti's engagement with these issues, we can acquire only a limited understanding of Grameen Shakti's role or potential role in the larger 'development' picture. It is these final concerns which will be addressed in the following chapter, using an 'everyday IPE' approach.

Chapter 8 – Beyond 'market failure':

The power relations affecting and affected by Grameen Shakti

8.1 Introduction

In chapters six and seven we explored Grameen Shakti's ability to deliver on its energy development claims and objectives, with an exploration of its 'success' and 'failure' in addressing both 'basic' and 'marginalised' energy market failures. The final analysis in chapter seven, though, raised concerns about the approach used thus far to address and measure the energy development of rural households. It was argued that for a comprehensive analysis we need to extend beyond an economic focus on market failure and technology dissemination, to explore the political factors which influence energy poverty in rural Bangladesh. More specifically, analysis of local structural inequalities, national government influence, and the broader political economy of donor development ideologies, will help to reveal the underlying dynamics which have shaped Grameen Shakti's role, its choices and its ability to address rural energy needs.

In order to explore these political dimensions, this chapter will firstly analyse the relationship between Grameen Shakti and its customers with specific reference to the wealth hierarchies and the traditional patriarchal norms which pervade everyday life in rural Bangladesh. We will see that exploration of these two aspects of local power relations can lend insight into, not only why Grameen Shakti's sales figures were low in some areas, but why its operations are unlikely to have transformative effects on the entrenched inequalities in the rural energy sector.

Turning to the national sphere, we can then question whether the (non-political) market focus of Grameen Shakti's energy solutions may have been influenced by dominant actors and ideologies in Bangladesh. Specifically, it is the influence of the

Government of Bangladesh and the World Bank, along with the national development context, which will prove of most interest. This analysis of the broader political economy will help us to identify how social enterprises, like Grameen Shakti, fit within global development trends, and the consequences of adopting a pragmatic form of resistance to entrenched institutions of power.

8.2 The local socio-political development dimension

In chapter three we explored the activities and priorities of the major actors in the energy sector of Bangladesh and drew attention to some key areas of neglect. Specifically, it was shown that the 'conventional' approach to energy development in Bangladesh has not given sufficient attention to creating sustainable energy options for rural people, with biomass fuel for women's energy needs being an area of particular concern (see section 3.4). In section 3.5 it was argued that a social enterprise which is attempting to address these energy issues would face political difficulties in doing so, due to local traditional hierarchies and norms. In the analysis of Grameen Shakti thus far, though, we have primarily focused on market or technology-based energy issues, without exploring these political concerns. Thus in the following, we will focus on the local elite-poor hierarchies and patriarchal norms which influence Grameen Shakti's ability to address energy development in Bangladesh.[87]

8.2.1 Elite-poor hierarchies in rural energy access and control

Bangladesh is still primarily a rural country, shaped by traditional structures and customs, including the wealth and class hierarchies which influence many aspects of everyday life for both the local elite and poor. "How income was to be generated, by which types of activities, and in which niches of the market, were strongly influenced by the economic interests of the local elite, who also controlled the local government"

[87] The following analysis is based on both primary and secondary sources as limitations on field research (as explored in section 5.2.4) reduced the author's ability to conduct comprehensive interviews or surveys on local energy issues.

(Sanyal 1991 cited in Makita 2009, p.53). At the village level, control over resources (*e.g.* energy technologies and fuels) or preferential treatment from those who provide these resources (*e.g.* Grameen Shakti and local government) are ways that elite privilege and poor disadvantage manifest themselves. Development initiatives which are designed to benefit less powerful groups or households, for example, can be "captured" by local elites, if there is insufficient awareness of this risk and no measures to address it by the development organisation (Matin and Hulme 2003, p.650). Grameen Shakti's pro-poor mini-SHS initiative, as an illustration of this, was found to be most often sold to richer households (to supplement their existing grid electricity supply), rather than to poorer households to enable them to afford solar electricity.[88]

It was argued in section 3.4.2 though, that the most significant energy issue for the poorest Bangladeshis, which is closely connected with elite-poor socio-political relations, concerns biomass fuel supply and collection. It was argued in section 3.5 that diminishing forested areas, lack of public access to the remaining common woodlands, the reliance of the poor on the farming areas of rich land owners, and the growing commercialisation of fuelwood, are all factors which disproportionately affect poor people's ability to access biomass fuels. Significantly, each of these issues is potentially politically volatile and/or involves exploitation of elite-poor relations. This is primarily because biomass production and collection are directly connected with land ownership and wealth hierarchies.

[88] As Grameen Shakti is a sales-based organisation, the sale of the mini-SHS to richer customers does not reduce the number of mini-SHS which can be sold to poor houses, as might be the case in other nonprofit or government projects. It does, however, mean that there is less staff time or motivation for selling the mini-SHS to less accessible, poorer households, as was observed to be the case (see section 6.4.3). Grameen Shakti's other pro-poor options may, similarly, inadvertently reinforce local power hierarchies. It was found, in section 6.4.3, that the pro-poor micro-utility option (which would be affordable to poorer customers) was not often offered, and that Grameen Shakti staff were, instead, encouraging its regular customers to sublet or sell their gas and electricity to poorer neighbouring businesses or houses. While this may be a beneficial way for poorer households to afford these forms of energy, it can also potentially reinforce existing power structures which see poorer people lacking control over their energy and being beholden to richer neighbours. These are political issues, however, that Grameen Shakti does not explore.

Grameen Shakti, in general, has not actively sought to address this biomass fuel supply dilemma in its energy strategy.[89] While it has acknowledged the need to reduce the deforestation of local woodlands, it does not appear to address this issue beyond advertising the ability of its technologies to reduce the demand for fuelwood (see Barua 2007, p.11; Kamal 2010, February 24). The biogas plant uses cow or fowl manure to produce biogas for cooking, and thus eliminates the need for fuelwood collection. As only those with sufficient access to livestock can benefit from this technology (notably not the poorest) however, this is not a comprehensive solution. The ICS is more affordable for poorer Bangladeshis, but it still requires access to sufficient biomass fuel. That is, while the ICS and biogas plants may be more efficient, environmentally friendly and healthier alternative cooking technologies, these products alone do not address the fundamental issue of how poorer rural Bangladeshis can address their primary energy needs.

8.2.2 Patriarchal norms influencing Grameen Shakti's activities

As explored in section 3.5, patriarchal norms in Bangladesh have contributed to the general neglect of women's energy needs. While Grameen Shakti is not addressing women's energy needs concerning biomass fuel supply, it does appear to be aware of and is in part attempting to address some of the underlying patriarchal norms which lead to gender inequalities (Barua 2007, p.12). It can be said to be challenging these gender norms with its employment of female engineers, solar technicians and salespersons in the GTC and branch offices, as it encourages them to be part of the public, economic workforce. "Instead of passive victims, they are becoming active

[89] While Grameen Shakti does have a trial tree plantation programme in Jabria, Phulpur (Dipal 2008, p.4), this has not been up-scaled, and appears to be more focused on orchards rather than fuelwood. Interestingly, many of the ICS customers interviewed claimed to be unconcerned about fuelwood supply (though this did vary from branch to branch). This response, however, is likely to be a reflection of Grameen Shakti's richer target customer base, with those interviewed having less difficulties accessing or buying fuelwood. Women from the Grameen Bank branches (*i.e.* poorer, non-customers), alternatively, were vocal about their difficulties in obtaining sufficient biomass for cooking (which also varied across the different districts). A survey by the World Bank (2010, pp.20, 23) of people using improved cook stoves in several different projects, found that "lack of raw material" was a common issue.

implementers to bring socio-economic improvement in their lives as well as the lives of others" (Barua 2007, p.9).

Grameen Shakti does not, though, appear to consider how local patriarchal norms may act to neutralise these empowerment measures. For example, female employment with the GTC, while unconventional, is considered acceptable, as the employees are generally young and unmarried (as women are expected to cease employment once married), and since they are involved in work within a respectable (*i.e.* enclosed) environment in the GTC office. Female employment in more public roles, such as door-to-door sales, alternatively, is less socially acceptable. The result of this, for Grameen Shakti, is that its aims of employing women to sell the products (as branch employees), or construct the technologies (as self-entrepreneurs) has been difficult, and resulted in very low numbers of female employees in the Grameen Shakti sales branches (as noted in section 6.7.1).[90]

Furthermore, observations and interviews during the 2008-2009 field research revealed a general feminising and masculinising of Grameen Shakti's technologies, most notably by the Grameen Shakti sales staff themselves. The improved cook stoves, being mainly used by women for cooking, were not afforded the same status as the solar home systems by the staff. Talking to various (male) branch staff, I received the impression that solar panels were thought of as "high tech", "magic-like" and prestigious. I was told by several of the sales staff that they felt more inclined to promote solar panels, than the cheap, "low tech", "dirty/messy" ICS. Cooking, as might be expected, was not generally considered an energy priority by these young Bangladeshi men. The lack of female employees in the Grameen Shakti sales branches (due to patriarchal norms, as noted above), then, has compounding consequences for which technologies are most promoted and marketed. That is, the lack of female

[90] More specifically, it is the construction of the ICS by female self-entrepreneurs which has not been successful, as also found in a World Bank (2010, p.22) survey of other GTZ Partner Organisations. The SHS components are constructed by female GTC contractors, as this can be performed within the women's homes, and the biogas plant is constructed by local masons and workers, who are invariably men.

branch sales staff, ironically, may have reduced the sales of ICS, the energy technology which could most benefit poor rural women.[91]

In chapter seven, it was hypothesised that this low prioritising of the ICS, by branch staff, was encouraged by managers and the Head Office for *financial* reasons (see section 7.2.4). That is, prior to 2010, the ICS sales were negatively impacting Grameen Shakti's financial bottom-line. Importantly, though, patriarchal norms also play a role in these financial difficulties.

Gendered norms can affect a household's choice of which technology to buy, especially as it is men who most often make the decisions regarding money expenditure in rural Bangladesh (Develtere and Huybrechts 2002, p.21). As noted in section 3.4.3, technologies which assist in food preparation for example, as the domain of women, are considered of lesser import and are generally less invested in by households (BEN 2006, p.4).[92] Due to the low value of 'women's work', rural households, especially the poorer households, are generally not willing to pay a high price for a cook stove. The consequences of this for Grameen Shakti, is that it was not able to charge its customers the full cost of the ICS, in terms of construction hours *etc*. Consequently, Grameen Shakti, in trying to keep the price of the ICS sufficiently low, was making a financial loss from each ICS sold. Therefore, while these financial motivators may have directed Grameen Shakti to not prioritise the ICS (as suggested in chapter seven), it can be argued that patriarchal norms, specifically the undervaluing of 'women's technology', fundamentally contributed to these financial difficulties. Since Grameen Shakti does not attempt to address the value of 'women's work' in rural society or the market place, its ability to change patriarchal norms in this arena is limited, to the detriment of its own financial goals.

[91] Gender-based technology dissemination issues are prevalent around the world (Foster 1999, pp.18-20). In India, for example, it is now being recognised that the "lack lustre performance of improved cook stoves and biogas reflect lack of women's involvement" (Dutta 1997, p.283).

[92] As noted in section 6.4.3, several women interviewed claimed that they could not justify the full cost of an ICS, as they already had a functioning traditional cook stove. This is despite the health problems the smoky traditional stoves cause, as acknowledged by the women themselves. While this is no doubt a reflection of the households' financial situations, it also indicates that women's technologies and health are not as highly valued.

8.2.3 The difficulties in addressing socio-political development issues

One of the claims of the Grameen social enterprises is that they help to build an alternative economy where both financial and social capital are valued, including the social goals of poverty alleviation and female empowerment (Yunus 2007a, pp.21-23). An analysis of local power relations and hierarchies in Bangladesh, however, raises doubts as to whether Grameen Shakti's approach is sufficient for addressing historically-embedded wealth and gender inequalities.

The apparent incompatibility of social enterprise with addressing complex political and social issues is a limitation that has been highlighted and critiqued by several authors. Ramanathan (2008, July 19), for example, argues that the development sector needs more than a market-based social enterprise can offer:

> Only a small handful of these challenges can be solved with market-based approaches —with revenue models that can create self-financing entities run by social entrepreneurs. A majority of our social challenges will always need grant-based support. Mid-day meal schemes, the care of challenged children, women's rights programmes — these are examples of the kinds of complex social challenges that don't have 'revenue-model' solutions.

As noted in chapter two, Michael Edwards (2008b, p.14) dismisses the ability of philanthrocapitalist ventures to address the issues which drive poverty and undermine development:

> New loans, seeds and vaccines are certainly important, but there is no vaccine against the racism that denies land to 'dalits' (or so-called 'untouchables') in India, no technology that can deliver the public health infrastructure required to combat HIV, and no market that can re-order the dysfunctional relationships between different religions and other social groups that underpin violence and insecurity.

These arguments are certainly a welcome counterpoint to the vast uncritical literature concerning social enterprise and similar hybrid organisations (see section 2.3.3), and they appear to be supported by the example of Grameen Shakti in Bangladesh.

However, while social enterprises like Grameen Shakti are insufficient for a comprehensive solution to energy poverty in rural areas in Bangladesh, they can still fulfil a much needed role. That is, as explored in chapter seven, Grameen Shakti has been instrumental in supplying basic energy services to millions of rural Bangladeshis, in a more efficient and sustainable manner than previous government and non-government efforts.

It could be suggested, then, that a social enterprise like Grameen Shakti should collaborate with other actors, such as Government departments, international aid agencies or local NGOs, to create targeted policies and projects, and provide a more comprehensive energy development approach. Such collaborations are endorsed by various actors. The World Bank (2010, p.82), for example, has suggested that a campaign for improved cooking technologies could be run in conjunction with the (currently operating) sanitation public education program, to promote better understanding of the diseases caused by smoke inhalation.[93] For the more politically or socially contentious energy issues, though, partnerships with land reform or gender equality focused NGOs would also be needed.

The likelihood and success of such NGO-social enterprise partnerships, however, is contingent on the local and national socio-political contexts. It could be predicted, for example, that a social enterprise's collaboration with an advocacy NGO that seeks to disrupt local elite patronage and patriarchal norms, would be controversial. Within the Bangladeshi national context, as we will now explore, development (and the rules which circumscribe 'acceptable' development) is heavily politically controlled and monitored. It is these national contextual factors, as much as a social enterprise's inherent financial limitations, which determine the extent to which it can contribute to an effective development alternative.

[93] The GTZ project did attempt some public education surrounding the benefits of the ICS. This did not appear to be sufficiently well publicised, however, with most members of the Grameen Bank groups visited by the author, for example, having no knowledge of the ICS or its benefits.

8.3 Manipulation of the development sector in Bangladesh

Grameen Shakti, as a meso-level actor, is inevitably affected by the priorities and actions of the dominant actors in the Bangladeshi energy and development sectors, both national and international. In order to acquire a full understanding of the different pressures and forces which have influenced Grameen Shakti's choices, then, we need to explore the historical and national context in which it exists. While the analysis above has explored the potential and limitations of a social enterprise like Grameen Shakti by looking at the local context and the political dimension of rural energy needs, the following will explore the broader political economy of Bangladesh. The aim of this is to both improve our understanding of the trends found above and to shed some light on the role of social enterprises in developing countries more generally.

8.3.1 A history of elite involvement in Bangladesh's development sector

In the years following Independence in 1971, rural rebuilding, both in terms of physical infrastructure and national identity, saw the proliferation of "relief and rehabilitation" rural NGOs (Feldman 2003, p.7). Many of these locally-established development organisations attempted to adopt a holistic approach to rural development, with attention to social, economic and political structural inequalities, and aims to "mobilise the poor as part of a strategy to combat poverty" (Davis and McGregor 2000, p.57; also see Rahman 2006, p.454). The Government of Bangladesh was initially supportive of this burgeoning rural NGO civil society, as it brought foreign aid 'development dollars' into the country, indirectly profiting the Government and local elite (Nobusue 2002, p.35). In the 1990s, however, international donors became more circumspect with their funding, with an increasing focus on accountability and endeavours to lend directly to NGOs in an attempt to diminish government skimming and promote 'good governance'. This increase in funding had a considerable impact on the rural development sector, especially for a few well-placed NGOs, such as BRAC and

Grameen Bank, who up-scaled dramatically during this time (Fernando and Devine 2003).

The Government of Bangladesh's response to the increasing influence of Bangladeshi NGOs in international and rural circles was to actively legislate against the sector. It succeeded, for example, in dividing the NGO sector by disempowering and splintering the ADAB[94] alliance of NGOs in 2003, after an apparent political rift between its leader and Government elites (Ahmed *et al.* 2010, pp.27-28). The Government also endeavoured to keep greater track of NGO activity, with the creation of the 'NGO Affairs Bureau' (NGOAB) (Haque 2002, p.419; Rahman 2006, p.461). And, most significantly, it brought pressure on development organisations to direct their efforts towards more market-based rather than social or political advocacy-based activities and mobilisations (Blair 2005, p.926). In order to reinforce this final move, the Government formed a new norm concerning the 'proper' place and role of NGOs in Bangladesh: de-legitimating the involvement of NGOs in political activity, and creating suspicion around any who tried to buck this trend (Rahman 2006, p.466).

The Government's attempts to control the rural development sector by discouraging NGO political participation and, instead, promoting NGO involvement in the provision of basic rural services, has, however, proven to be a precarious choice. The growth of NGOs in the service sector is increasingly found to undermine the patronage position of the local elite, and has even challenged the national elite as NGOs assume basic state functions in rural areas (Devine 2003, p.235). This development sector history, then, has ultimately produced a contestation for power between the ever-larger NGOs and the local and national elites in Bangladesh. As noted by Stiles (2002, cited in Rahman 2006, p.460): "Historically, the relationship between the Bangladeshi government and the NGO sector has ranged 'from benign neglect to co-option to smear campaigns and repression', depending on the state's 'perception of the balance of power between it and the NGO sector'".

[94] 'Association of Development Agencies in Bangladesh' (ADAB)

8.3.2 A Gramscian interpretation of the marketisation of the Bangladeshi rural civil society

While Polanyi contended that civil society may provide a base for a countermovement against the capitalist state, Gramsci was more cautious (Burawoy 2003, p.198). For Gramsci, civil society was "a sphere of conflict in the struggle for ideological 'hegemony'" (Davis and McGregor 2000, p.50). And, as such, civil society has as much a potential for being co-opted and controlled by the state elites, as it does for acting against them. In Bangladesh, the Government's push for control of civil society[95] does appear to have somewhat succeeded in pre-empting unrest and diverting challenges from the bottom-up for fundamental change. For example, while recent years have seen a resurgence in general interest in national elections (Gross 2009, February 21), there has not been a corollary national movement for reform of the wealth inequalities which reinforce poverty in Bangladesh (Nuruzzaman 2004, p.33). The Government's deliberate marketisation of the development sector in Bangladesh, it will now be argued, has had a significant role to play in this.

While NGOs supply the goods-and-services that the state has neglected, it could be speculated that rural citizens would be less motivated to demand large-scale (and potentially volatile) structural reform. And while NGOs compete for customers rather than mobilise for change, it is arguably more difficult for poor rural people "to organize themselves independently of vested interests and structural inequalities" (Hulme and Edwards 1997, p.8). The case of Bangladesh exemplifies this. As various authors have noted, the primary consequence of the historical relationship between the Government and the NGO sector has been a gradual change in the priorities and foci of the development NGOs, moving them away from consciousness-raising and towards more revenue-raising models for their development projects (Davis 2006, p.10;

[95] It needs to be noted that there are various different types of civil society actors in Bangladesh, which can be broadly divided into two groups: development NGOs and traditional civil society. Historically, many traditional civil society organisations have been supportive, rather than disruptive, of local elite hierarchies and of the "collusion between the nation's ruling elites and local rural elites … [which] ensures that pressure for change is kept in check" (Davis 2006, p.6, also see Davis and McGregor 2000, p.58). For the purposes of this thesis, when the term 'civil society' is used it is the development NGO sector which is implied.

Rahman 2006, p.460). Despite many of the largest NGOs becoming powerful actors, Government pressure to confine their influence to more market-based, less politically-volatile issues has meant that the sector has become largely depoliticised[96] and arguably less able to challenge the structural inequalities that underlie poverty in rural Bangladesh (Davis 2006, p.13; Haque 2002, p.428; Tvedt 1998, pp.6, 135). Some have argued that, as a result, "the original mission of NGOs … to eradicate poverty, has become marginalized" (Haque 2002, p.429; also see Wood 1997, p.91). "Instead of promoting equality, NGOs allegedly play a conservative role by preserving class inequality, reducing pressure for radical reforms, and fragmenting the struggle of the rural poor" (Haque 2002, p.427; also see Tvedt 1998, pp.6, 135).

According to a neoGramscian perspective, a neoliberal agenda would similarly attempt to mould civil society into a non-confrontational space, populated by more market-oriented development organisations that can help to liberalise the state. Davis and McGregor (2000, pp.54, 60), for example, argue that international actors have been using civil society to transform the Government in Bangladesh: firstly, by using civil society services to help minimise government (within a 'government to governance' agenda), and secondly, by using civil society actors to ensure that this liberalisation follows a 'good governance' trajectory. Consequently, while the Government of Bangladesh has had a frictional relationship with rural development organisations, the World Bank among others has been largely supportive of the sector, especially of those NGOs which are compatible with a liberalisation agenda.[97] In a recent contest between Muhammad Yunus and the Awami League Government for control of Grameen Bank,

[96] The term 'depoliticised' or 'depoliticisation' is not used in this section to describe the forceful diversion of civil society away from 'party politics' (though this is an example of depoliticisation). 'Politicisation' is used, rather, to describe an actor's (or group of actors') awareness of, and ability and motivation to, contest relations of power (which may or may not be party political). Depoliticisation, then, might see an NGO adopting an economic conception of poverty, rather than a "politicised interpretation of poverty" (Davis and McGregor 2000, p.61), effectively avoiding the social and economic inequalities that are reinforced by hierarchical power relationships.

[97] In a 'peripheral' country such as Bangladesh, neoliberalism has been transplanted (arguably as the extension of US capitalist hegemony) rather than grown organically, resulting in less entrenched or 'hegemonic' control of civil society by the Bangladeshi state (Cox 1983, p.171). This may help to explain why the Bangladesh Government has had such a tumultuous relationship with its civil society. See Ahmed *et al.* (2010) for an interesting exploration of Gramscian 'hegemony' and 'counter-hegemony' in Bangladesh, with a focus on the NGO BRAC.

for example, the World Bank publicly supported the Bank and its 'private-bank' status (Conroy 2011, June 14). Despite their differing motivations, then, it can be argued that the World Bank, similarly to the Government, has effectively helped direct the rural third sector towards more depoliticised service-based activities.

8.3.3 Action and reaction by the Bangladeshi development community

While some in Bangladesh's NGO sector appear to be aware of this manipulation and choose to comply, others, in what could be described as a Gramscian state of apparent "false consciousness" (Mittleman and Chin 2005, p.19), do not appear to be aware of their role in the marketisation and depoliticisation of the NGO sector. This is not to imply, however, that there are not moments of resistance or tactical moves in opposition to Government and international pressure, especially from more astute members of civil society. Involvement in elections, careful manipulation of funding, and articulation of alternative economic paradigms are modes of 'everyday resistance' employed by actors in the Bangladesh NGO sector. [98]

The leaders of the larger NGOs, generally though, appear to have adopted survivalist strategies to deal with Government antagonism. In response to the attack on the ADAB in 2003, the chairperson of BRAC at the time chose to concede to Government pressure (to splinter the alliance), saying:

> The situation is life threatening for all Bangladeshi NGOs. You know about Bangladeshi politics. If we didn't form a new association of NGOs, the Government would destroy the whole NGO sector. We had to go with the Governments for the sake of the NGO sector. (Cited in Ahmed *et al.* 2010, p.28)

Such circumstances are a clear example of the pressure on Bangladeshi NGOs to remain politically neutral.[99] As argued by Rahman (2006, p.464): "Given this

[98] For more examples see 'Nijera Kori' ('Do it ourselves') in Davis (2006, p.11), and see Haque (2002, p.420-422).

[99] The development organisations Proshika, Nijera Kori and GSS (Gano Shahajyo Sangstha) have also faced "depoliticizing pressures" from the Government, when attempting to engage in more politically contentious "social mobilization" programs (Rahman 2006, p.458).

institutional context, it is unsurprising that most NGOs have chosen a more prudent path, pursuing apolitical service delivery to avoid antagonizing the Government and jeopardizing their ability to promote positive change".

The marketisation of the rural Bangladeshi NGO sector, and the claim by authors that this has led to a depoliticisation of the Bangladeshi rural civil society, does appear to fit with a scenario that Gramscian theory would predict.[100] The question that concerns the topic of this thesis, then, is how this context affects a social enterprise like Grameen Shakti and its ability to deliver an effective development alternative for rural Bangladeshis. The following will examine the choices that Grameen Shakti has made and the directions it has taken within this tumultuous environment, before extending the discussion to explore what this means for the role of social enterprises in Bangladesh and developing countries more broadly.

8.4 The influence of national and international ideologies and priorities on Grameen Shakti

In order to determine the extent to which Grameen Shakti has been affected by the pressures evident in the Bangladeshi development sector, we need to firstly explore the specific environment of energy-focused development organisations. That is, we need to look at what priorities and influence the Government of Bangladesh and international actors have had over the rural energy sector. From this, then, we can explore how Grameen Shakti appears to have complied or resisted these trends, and what this has meant for its ability to deliver energy services for rural people.

[100] This is not to imply that a Gramscian lens is the only world model which can explain these events, or that a Gramscian theory of capitalist hegemony is sufficient for explaining every facet of this situation. Traditional hierarchical (non-capitalist) structures, for example, especially in rural areas, are still very influential in Bangladesh, as noted in section 8.2.

8.4.1 Government and World Bank influence over energy and development in Bangladesh

8.4.1.1 Government control over the rural energy development trajectory

As explored in chapter three, the Government of Bangladesh has historically focused on the commercial or industrial aspects of energy development, with less interest or investment in energy for rural development. The 'National Energy Policy of Bangladesh' (GoB 2004), for example, is primarily focused on acquiring sufficient electricity for industrial and urban needs. Where rural energy is mentioned in Government policy, the focus is on "electricity for all by 2020" (GoB 2000), with rural electrification being a primary theme. The 'Renewable Energy Policy of Bangladesh' (GoB 2008) is a step away from the Government's traditional focus, however the policy still primarily focuses on, and is especially supportive of, the commercialisation of resources (renewable resources in this instance) for electricity production.[101] This has led to a dramatic increase in interest in the solar energy market in Bangladesh in recent years by NGOs and businesses, a trend which is supported by the Government (Parvez 2011, December 26). In this way, energy as a rural development issue has primarily been directed towards rural electrification, through either the PBS (which are partially Government controlled) or the marketisation of solar energy by NGOs and businesses, with less focus on more contentious energy issues such as biomass fuel supply and urban-rural inequities.

The Government has not entirely neglected biomass issues however, with its ongoing (though limited) cook stove projects and its involvement with forestry projects. Arguably though, its implementation of biomass projects has been characterised by bureaucratic control and oversight, rather than support for NGOs in advancing poorer people's rights over local resources. Studies of 'social forestry' in Bangladesh (which is designed to give local people greater say and participation in woodland use and conservation) help to highlight this. A study of social forestry in Gazipur by Khan and Begum (1997, p.263), for example, found that all major decisions were "centrally

[101] Even its reference to biomass resources focuses on how this can be harnessed to create electricity (GoB 2008, p.2).

[Government] designed and imposed", with farmers having "virtually no significant bearing on such decisions" and little involvement in consultations, monitoring or evaluation. This appears to be a wider Bangladeshi trend, with a review by Asaduzzaman (1989, p.15) claiming that "social forestry [in Bangladesh] barely passes the acid test of people's participation". Significantly, the relationship between NGOs and farmers in the Gazipur project was well established and positive, while there was "silent but sharp hostility between the government offices and the NGO" (Khan and Begum 1997, p.264).

More recent surveys of social forestry, interestingly, have been somewhat critical of NGO involvement, with complaints that they are now more profit-driven, often to the detriment of the social objectives of the project (Safa 2006, p.226). Arguably, the shift in focus from local social and political prerogatives to more market-based aims is a reflection of the market orientation that these NGOs have had to adopt in order to survive. In all, these circumstances suggest that the trends explored in section 8.3, of Government pressure for NGOs to become more market (and less politically) focused, are visible and influential in the rural energy development sector of Bangladesh.

8.4.1.2 World Bank interest in building a neoliberal solar market place

In terms of rural energy development, the World Bank has generally steered clear of traditional energy issues (such as biomass) and has instead focused on rural electrification.[102] Its most significant investment in rural Bangladesh and involvement with energy-focused NGOs began with the 'Rural Electrification and Renewable Energy Development' project (REREDP), which is now primarily focused on the distribution of solar electricity technologies (see section 3.3.3). The World Bank's investment in renewable energy options for rural areas is a significant shift away from its conventional energy development priorities (see section 3.3.4). However, the SHS component of the REREDP still appears to contribute to neoliberal development

[102] In late 2012, the World Bank did introduce a biomass and biogas component to its RERED project, with the initiation of REREDP II (2013-2018). The primary focus, however, is still predominantly on the dissemination of SHS, with 81% of the budget for "access to electricity" (primarily SHS) and 12% for "household energy" (primarily ICS and biogas plants) (Sadeque 2013, p.1).

goals.[103] That is, the World Bank's interest in 'solar' as an approach to rural electrification, it will be argued below, is due to the SHS being a market-compatible technology, which has the potential to contribute to the broader neoliberal goals of liberalisation, privatisation and marketisation in rural Bangladesh.[104]

The World Bank's initial interest in renewable energy technologies, globally, was contingent on them proving to be economically viable energy products (Martinot 2001; Jacobson 2007; Miller and Hope 2000). Miller and Hope (2000, pp.87-88) argue that the World Bank went through an energy policy shift when it discovered that solar home systems were financially marketable, with rural people being "willing to pay" for this technology. Since the introduction of soft credit for SHS in the RERED project, this has proven to be true for Bangladesh (see section 7.2.1). The World Bank's investment in the REREDP was initially predominantly focused on grid electricity. As Grameen Shakti's success in SHS sales continued (proving the economic viability of this form of rural electrification) the funding for the solar component came to dominate the RERED project (World Bank 2009b; see section 3.3.3). 'Solar', it appears, had become a market-compatible energy development option in rural Bangladesh.

The compatibility of the SHS with market processes, importantly, also aids in the marketisation and formalisation of the largely informal Bangladeshi rural energy sector. The World Bank has measured the success of the RERED project, for example,

[103] The uptake of 'solar' as a solution to energy poverty in developing countries was explored in section 3.2.3.3. It has been argued by other researchers that investment in solar electrification is part of a neoliberal development theme. This is arguably also the case for Bangladesh.

[104] It must be acknowledged that the World Bank is a multidimensional organisation, housing a variety of different actors, rather than a homogenous institution with a single development agenda. For example, along with publications on electricity production for national industrialisation, others in the World Bank have published informative reports on the need to address biomass cooking issues in rural Bangladesh (Asaduzzaman *et al.* 2009; World Bank 2010). Furthermore, the rural development objectives of neoliberal institutions such as the World Bank often include reference to improving rural people's welfare. This is not inconsistent with the argument here though, as market-based development is considered (under a neoliberal lens) to be the best way to deliver economic growth (and employment *etc*), which is assumed to enhance social welfare. The two cook stove reports mentioned above, for example, do still appear to focus on finding market-based solutions to these unconventional energy issues (Asaduzzaman *et al.* 2009, p.xx; World Bank 2010, pp.81,85).

by counting the number of SHS sold and evaluating the financial viability of its POs.[105] As documented by IDCOL (2010b), the REREDP's "principal objective" is the "commercialization of SHS". The sale of SHS through the REREDP sees the establishment of a rural energy market structure: with product-demand from rural customers, and product-supply by sales-oriented providers.[106] The SHS product has the potential for continued purchases of new appliances (such as replacement batteries, mobile phones *etc*), making it suitable for development of a consumer market; the 'plug-and-play' feature of the SHS make them relatively simple to sell and install; and the SHS are touted as helping customers to create income, keep shops open for longer, and engage in home-based enterprises (World Bank 2006, p.20).

In terms of compatibility with broader neoliberal privatisation and liberalisation objectives, the SHS component of the RERED project also appears to provide the World Bank with an opportunity to circumvent the Bangladeshi national and local governments, and establish a private rural energy market.[107] The Siddhirganj project has been marred by Government mismanagement and the rural grid electrification project is controlled by the Government's 'Rural Electrification Board' and local PBS cooperatives (see sections 3.3.1 and 3.3.3). The SHS project, alternatively, is based on market-oriented, product-sales mechanisms, facilitated by the Partner Organisations like Grameen Shakti. The SHS technology, furthermore, has the potential to integrate remote areas of rural Bangladesh into the international market, with solar panels and circuitry imported from abroad and assembled locally. And finally, in a move towards further national economic liberalisation, lobbying by Grameen Shakti has helped reduce the tariffs on the importation of solar panels (Kamal 2010, p.19).

[105] The 'Monitoring and evaluation of outcomes/results' component of the World Bank's (2007, p.3) REREDP project appraisal report, for example, only referred to evaluating the "number of SHSs that are operational" and the "monthly instalment payments made by the households", rather than any attempt to determine the impact of the project on rural people's lives. There are plans, however, for a more detailed appraisal of the REREDP's impact in 2013; it will be interesting to see what focus this evaluation takes.

[106] The World Bank is also interested in the potential for SHS to enter the carbon emission reduction market, with a recent World Bank report focusing on the market compatibility of this option (Wang *et al.* 2011).

[107] See Haque (2002, p.423) for an argument that this is part of a neoliberal trend in Bangladesh.

8.4.1.3 Government and World Bank potential for direct and indirect influence over Grameen Shakti

The above analysis indicates that both the Government and the World Bank have directed the rural energy sector towards more a market-compatible development trajectory. While there are certainly other actors in the rural energy development field (with a broader range of interests), it is the Government and the World Bank which have the most potential influence over Grameen Shakti, and hence are of most interest here. The Government of Bangladesh has several potential means of control over Grameen Shakti and its operations. For example, Grameen Shakti as a nonprofit organisation needs to register with the NGOAB and gain Government approval for any international aid received. More directly, the Government-owned company IDCOL is the intermediary between Grameen Shakti and its funders for the solar RERED project and the biogas plant NDBM programme. As such it has direct control over specifics of the projects (*e.g.* subsidy size for the biogas plants).

Financially, though, it is the World Bank that has the most potential for influencing Grameen Shakti's decisions, due to both the size and longevity of its financial support. According to a Grameen Shakti financial audit, the World Bank's RERED project is the most significant source of funding for Grameen Shakti (HYC 2008, p.12). Its zero interest credit to POs has effectively enabled Grameen Shakti to produce revenue from the interest (or 'service charge') paid by SHS customers. Consequently, as demonstrated in figure 8.1 below, 75% of Grameen Shakti's revenue in 2007 can be directly linked to the REREDP. A large proportion of Grameen Shakti's continued financial success, then, is reliant on the continued support of the World Bank. With the Government of Bangladesh and the World Bank having the most potential for influence over Grameen Shakti, and with these two actors having their own agendas concerning development, it is important to now analyse how Grameen Shakti has reacted to these pressures.

Figure 8.1: Percentage each product contributed to Grameen Shakti's financial bottom-line in 2007, in terms of the revenue from its sales (minus sales costs), and interest from the loan repayments made by customers (labelled 'service charge'). The ICS resulted in a 0.5% loss in revenue in 2007. Source: Grameen Shakti's 2007 Financial Audit (HYC 2008).

8.4.2 Grameen Shakti's pragmatic resistance

While there is no evidence of overt or direct pressure on Grameen Shakti, the history of Government-NGO and World Bank-NGO relations have no doubt shaped Grameen Shakti's choices and development trajectory. Throughout the thesis, however, we have seen a mixed response by Grameen Shakti towards development and energy norms in Bangladesh. In terms of changing energy development priorities, for example, Grameen Shakti has been a leader rather than a follower; however, it has accomplished this using a less controversial, more acceptable, development methodology. That is, similarly to other development organisations in Bangladesh, Grameen Shakti appears to have adopted a pragmatic response, as we will discuss below.

8.4.2.1 Grameen Shakti resisting the 'conventional' energy development norms

In the energy development arena, Grameen Shakti has been a pioneer in rural-focused, renewable energy solutions. Despite the dominance and prevalence of the

'conventional' approach to energy development in Bangladesh when Grameen Shakti first began operations in the mid-1990s, it chose to adopt a fundamentally different set of objectives. Rather than focus on the 'energy crisis' in the industrial and urban centres of Bangladesh, it has prioritised the rural and remote areas. Rather than employing large, centralised, fossil fuel driven power production, Grameen Shakti has employed an approach which disseminates small-scale, renewable energy technologies to rural Bangladeshi households. This is a considerable step away from both 'conventional' energy development in Bangladesh, and the 'energy security' paradigm which currently appears to support this approach (see section 3.3.4). Instead, Grameen Shakti's conception of energy development contains elements of both the 'energy sustainability' and the 'energy poverty' paradigms described in chapter three.

Grameen Shakti's choice to adopt a decentralised approach is significant, since a lack of control over energy, especially over kerosene and electricity supply and prices, is one of the ways that urban-rural energy inequalities manifest themselves, with people in rural areas often being those with the least control over electricity and kerosene markets. As opposed to centralised grid electricity, which is produced and controlled by Government and business interests, Grameen Shakti's decentralised SHS are owned and controlled by the household. Once purchased, those owning SHS are no longer reliant on fluctuating electricity or kerosene prices. Nor are they at the mercy of frequent planned and unplanned power outages. This is in contrast to the PBS rural energy program which focuses on grid line extension and mass power generation (see section 3.4.1).

Furthermore, from the mid-2000s onwards, Grameen Shakti extended its mission objectives by branching out into non-electric cooking services. Grameen Shakti's ICS and biogas plant technologies represent a distinct departure from the conventional 'rural electrification' priorities for energy development in Bangladesh, where biomass cooking needs have been largely neglected (see section 3.4.2). Grameen Shakti's uptake of cooking technologies, then, could be considered a step towards a more 'energy services' approach to energy poverty (see section 3.2.3).

In summary, Grameen Shakti's primary objective, of providing renewable, decentralised electricity and cooking energy services for rural Bangladeshis, represents a significant act of resistance to the norm. Grameen Shakti's efforts to go beyond the 'conventional' energy approach of the World Bank and the Government, and the increased attention its activities have brought to the energy needs of rural people, should be given due credit. It was Grameen Shakti's endeavours in SHS, biogas and ICS that initiated the current flurry of activity in these areas. The World Bank's choice to invest in rural solar energy, IDCOL's involvement in the rural biogas project, and GTZ's rural cook stove initiative, for example, were all either motivated or galvanised by Grameen Shakti's example.[108]

8.4.2.2 Grameen Shakti's adoption of the neoliberal methodology

However, while Grameen Shakti has raised the profile of rural energy, and has done so by resisting the conventional approach to energy development in Bangladesh, it has nonetheless adopted an approach which is more in-line with, than contending against, the interests of powerful actors. The most direct evidence of this is its choice to focus on the sale of energy *products* to address energy poverty in rural Bangladesh. The sale of renewable energy technologies requires less confrontation or negotiation with local governments than more delicate forestry issues; it does not require any form of consciousness-raising or rights-based issues for the poor; and it provides a (potentially) financially self-sustainable, market-based solution to rural energy needs.[109] In this way, the sale of energy technologies (as seen in the example of the SHS in section 8.4.1.2 above) is compatible with the development trajectories of local elites, the national Government and international institutions like the World Bank, respectively.

[108] The World Bank's interest in adding ICS and biogas plant components to the REREDP II in 2013 is another example of how Grameen Shakti's activities have influenced the direction of the rural energy sector in Bangladesh.

[109] It needs to be restated here that the author is not implying that Grameen Shakti's successful creation of a rural renewable energy market is a negative development. Indeed, chapter six has documented the many benefits of this, in terms of the number of rural households with lighting and improved cooking facilities. Problems arise, however, when market success is prioritised over all else by either Grameen Shakti or funders, as will be further explored in section 8.5.

We have also seen, however, that Grameen Shakti's social mission goes beyond product sales to also focus on more potentially controversial issues. Grameen Shakti's more ambitious social objectives, of providing pro-poor options, encouraging female empowerment and focusing on environmental sustainability for example (see section 4.3), do not fit within the conventional neoliberal development model, and involve issues which may arouse elite antipathy. However, while these social *goals* may deviate from a market-focused prescription for development, it can be argued that Grameen Shakti's *method* for the delivery of these goals still has synergies with the neoliberal approach.

As explored in chapter seven and in section 8.2 above, Grameen Shakti's primary methods of alleviating rural poverty and fostering female empowerment have both involved, firstly, the sale of energy products and, secondly, market employment opportunities. For the poorest rural Bangladeshis, Grameen Shakti encourages employment in its branches and the purchasing of its 'pro-poor' energy products (see section 7.3). Similarly, Grameen Shakti aims to foster female empowerment by employing women in non-traditional roles and by selling them cooking products (see section 8.2.2).[110] Grameen Shakti's objective to improve the environment, also, primarily relies on the sale of its renewable energy technologies to accomplish this task.[111] In sum, Grameen Shakti's focus on product sales, credit provision, individual entrepreneurship, income generation and employment (Barua 2007, pp.1-3, 6-12; Yunus 2010), appears to demonstrate its preference for a neoliberal development methodology.

The neoliberal discourse, it can be argued, has had indirect influence over Grameen Shakti, by shaping Yunus' (and Grameen Shakti's) conception of what the economy should look like. That is, the hegemony of the capitalist discourse has meant that Yunus' philosophy, and Grameen Shakti's activities, have been primarily framed through a development lens which focuses on markets, technology, income and

[110] Also see section 3.5 for an overview of how patriarchal and capitalist norms intersect to reinforce gender inequalities, making (capitalist) market-based solutions to female empowerment unlikely. See below.

[111] Grameen Shakti does have a small school education program, but field interviews suggested that this is a peripheral concern, performed by the GTC staff when convenient.

employment, rather than socio-political relations, power contestations and structurally embedded inequalities, as explored in section 2.4.1. As demonstrated in detail above, the consequence of this for Grameen Shakti, is that its ability to benefit rural people is restricted to those who can be reached (and not negatively impacted) through market-compatible processes (*e.g.* the buying and selling of energy technologies). Addressing energy issues such as the undervaluing of 'women's work' and 'women's energy technologies', for example, is likely to be impeded, rather than resolved, with a neoliberal development approach, since it also inherently undervalues non-income generating goods and activities such as home-based cooking (LeBaron 2010, p.893; Warner and Henderson 1995, p.51; also see section 3.5).

Concurrently, Yunus and Grameen Shakti have been under national pressure to avoid overtly political discourse and actions. Muhammad Yunus appears to have adopted a mixed response to Government pressure. While Yunus originally encouraged Grameen Bank members to stand for local elections for example (Develtere and Huybrechts 2002, p.25), this initiative appears to have been side-lined as more financial concerns are prioritised. At the national level, however, Yunus has remained more personally politically active, with an attempt to create a new political party 'Nagorik Shakti' ('Citizen Power') in 2007 (Daily Star 2007, February 23; Yunus 2007, February 23). This attempt to more overtly challenge the political elite was ultimately unsuccessful, and has since led to (what appears to be) retribution by the current Awami Government. Specifically, in 2011 the Government of Bangladesh successfully enforced the retirement of Muhammad Yunus from the Grameen Bank chairperson position (Conroy 2011, June 14), and it has been attempting, since then, to wrest control of the Grameen family of social businesses (Economist 2012, January 28).

Grameen Shakti's decision to engage in a less politically confrontational form of social enterprise (*i.e.* a product-focused social enterprise) could, in terms of the national development context, be considered a more conservative approach to 'resistance'. That is, rather than risk alienation or contestation with the local elites or the national Government, Grameen Shakti has chosen to challenge the status quo only so far as to not incur the wrath of these powerful actors. Its commitment to more 'alternative'

energy objectives, as noted above for example, appears to be directed by, rather than remaining in confrontation to, existing power norms. For example, Grameen Shakti has acknowledged the need to focus on cook stoves, but has possibly deliberately avoided biomass supply issues for pragmatic reasons: choosing to avoid a potentially politically volatile and economically unrewarding venture.[112]

Grameen Shakti, it can be argued, is enacting a form of prudent resistance, where it attempts to challenge the status quo but places it own financial and political survival at the fore. This, arguably, places Grameen Shakti at the more "compliant" end of the 'everyday resistance' spectrum for development organisations (Townsend *et al.* 2004, p.872; see section 2.5). Despite its moves to step 'outside the box', Grameen Shakti's market-focused, neoliberal development strategy is compatible with the priorities of its primary funder the World Bank, is less likely to excite Government attention, and is less likely to cause local political disruption. A 'pragmatic resistance' approach such as this could be considered a relatively common survival strategy by NGOs in Bangladesh (as explored in section 8.3). It is this strategy that has enabled Grameen Shakti to address basic rural energy needs relatively unimpeded (which, in the Bangladeshi development context, is an achievement that should not be lightly dismissed), but has also allowed social enterprise to be used as a legitimating tool for these powerful actors, as will now be explored.

[112] That is, by focusing on the fuel-saving benefits of ICS, Grameen Shakti is somewhat addressing biomass supply without having to engage with the more complex socio-political dimensions of the problem. Another example of Grameen Shakti's 'pragmatic resistance' is its limited challenging of patriarchal norms (see section 8.2.2): While Grameen Shakti did attempt to empower women by employing them to build the original ICS, the lack of female applicants (due to cultural patriarchal norms) was solved by employing more men, rather than addressing the underlying social issue.

8.5 Social enterprise as a pawn in the new global development trajectory?

8.5.1 The co-option of the social enterprise concept in Bangladesh

Yunus (2007a, p.215) has promoted how "[s]ocial businesses may become a source of the strong counter-voice [to free market capitalism] that we are looking for". In practice, however, it has not been Yunus' call for the market to embrace more socially-oriented objectives (and less profit) which has been most encouraged and promoted in Bangladesh, but rather it is his argument that poverty can be addressed through self-sufficient enterprises that has received most attention.[113] The market orientation and success of most of the Grameen social businesses (see section 7.4), ironically then, have lent weight to the Government of Bangladesh's and the World Bank's claim that all development NGOs should become more market-focused and financially viable.

Zohir (2004, p.4112) argues that many of Bangladesh's NGOs are shifting to a more social enterprise hybrid form, not because they believe this will better benefit rural people, but because of pressure from international donors to become more "financially self-reliant". For the Government of Bangladesh, the concept of social enterprise is useful in justifying the reduction in welfare, with "various levels of the Bangladesh government … actively encouraging the replacement of many basic social welfare programmes and entitlements with Grameen-style NGO programmes" (Bateman and Chang 2009, p.12). Consequently, over the past few decades in Bangladesh, the number of social enterprises (such as microfinance NGOs) has been rapidly rising, while the diversity of NGOs has diminished. As demonstrated in the pie chart below (figure 8.2), over 90% of development NGOs in Bangladesh now include microfinance in their activities (Gauri and Galef 2005, p.2050).

[113] While the World Bank, among others, has also encouraged MNCs to take on more corporate social responsibility in countries like Bangladesh, this is invariably described as an 'add-on' (or a beneficial business opportunity), rather than a more radical change to a company's double bottom-line (for example in ESMAP 2010). For NGOs, alternatively, the addition of a financial bottom-line is now considered a marker of 'success' (see section 8.5.3.2).

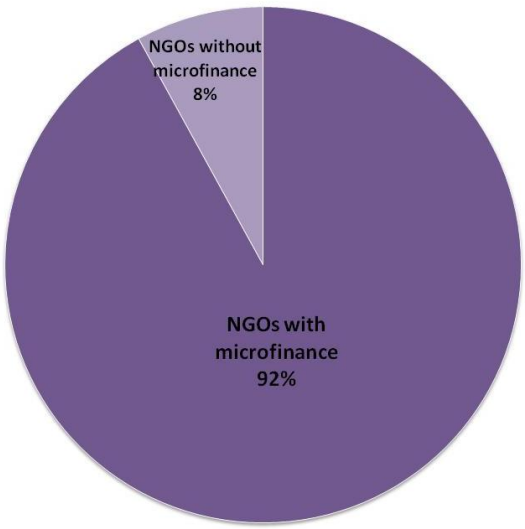

Figure 8.2: Percentage of NGOs in Bangladesh with microfinance as one of their services (Gauri and Galef 2005, p.2050).

As social enterprise is encouraged, and non-market-based NGOs become more marginalised and scarcer, the potential for change to the current development sector trajectory diminishes. On the local level, one consequence of this is that there are fewer advocacy-based NGOs which are able and willing to challenge local structural inequalities. The suggestion made at the end of section 8.2, then, that market-based social enterprises like Grameen Shakti should create partnerships with advocacy-based NGOs (to address more complex socio-political development issues), becomes less probable, not just because of the politically sensitive nature of these issues,[114] but because there are fewer advocacy-based NGOs able to fill this role. As noted in section 8.4.1.1, revenue rather than advocacy has become a goal for many NGOs involved in social forestry. The irony in this scenario is that the achievements of social enterprises, like Grameen Shakti, appear to have contributed to this dilemma.

The approach of 'pragmatic resistance' adopted by the Grameen social enterprises (which appears to be a common survival response by Bangladeshi NGOs), is insufficient for responding to the broad-scale changes which are continuing to shape the

[114] That is, advocacy NGOs would have difficulty addressing politically-sensitive (non-market-based) issues due to both the Government's pressure to steer clear of these areas and the disinclination of many (neoliberal-informed) international funders to support less market-compatible development initiatives.

Bangladesh development sector. While the decision to focus on economic modes of development may have led to greater technology uptake for many rural households and helped appease the national Government and international funders, it leaves social enterprises without an adequate discourse (or strategy) to identify and deal with these political issues. Instead, social enterprises give greater credence to Government and international efforts to continue with a market-based development approach.

In summary, there is a strong argument that the concept of social enterprise (in the form of Grameen Bank, Grameen Shakti *etc*) has been used to 'sanitise' or legitimise the marketisation, liberalisation and depoliticisation of the civil society sector in Bangladesh. Rather than aiding in the transformation of the capitalist system to better address social needs, Yunus' social businesses can be seen to help justify the pacification of civil society to capitalist processes, which keeps the Bangladeshi elite in power, and enables a more neoliberal-compatible form of development. While a pragmatic form of 'everyday' resistance may be more successful in the short term and provide material benefit for many (as in the example of Grameen Shakti), it leaves us wondering as to the long term consequences of such a strategy. Will social enterprise be able to create a real alternative to the profit-driven capitalist market place, as Yunus desires, while following this route? There are important risks and benefits that need to be carefully weighed up by social enterprises attempting to contribute to an alternative development solution. Without adequate recognition of the underlying political processes and the hegemonic power of the capitalist discourse, though, these are issues that cannot be properly addressed.

8.5.2 What 'space' does social enterprise occupy in global development?

The experience of Bangladesh's civil society, explored above, bears similarity to trends reported in various other developing countries across the globe. Development NGOs are increasingly being judged on their ability to fund their own activities, to enhance and formalise the rural market, and to move basic services away from government. Studies by the World Bank, for example, are often found to weigh financial self-

sufficiency as being equally or more important to the 'success' of an NGO as its ability to alleviate poverty or positively impact the recipients (see the World Bank journal articles by Bennett *et al.* 1996 and Edwards 1999 for two examples). One consequence of this is that many NGOs have adopted microfinance practices, in an attempt to incorporate market compatible (and hence 'profitable') activities. Jain (1994) completed a study of eleven large NGOs across Asia and found that all included an element of microfinance in their operations, and used a business hierarchical structure to administer it.

As explored in chapter two, microfinance is being used by various developing country governments to justify welfare shirking. Harper (2007, p.258), for example, reports that some local officials in the Indian government are neglecting basic community services, such as education and health, as poor people "now have microfinance" and can apparently afford to pay for these services themselves. Such scenarios raise concerns, as demonstrated in the Bangladeshi case above, that social enterprises are not creating a new space between the economic and social spheres, but being used to slowly enable a marketisation or liberalisation of civil society.

Furthermore, it might be predicted from studying the Bangladesh experience, that as market and service-oriented social enterprises gain more of the funding pie, and advocacy-based NGOs gain less, a developing country's NGO sector as a whole will move away from more contentious political issues. For those development organisations which find themselves forced to adopt social enterprise practices (due to pressure from foreign investors or national governments), the available 'space' for any form of resistance may become smaller and more difficult to negotiate. Consequently, there may be fewer third sector actors with solutions that might better target the poor, or in fact, challenge the underlying norms and political power which create and reinforce inequalities in the first place. While such trends are being reported around the world, the role of social enterprise (with the exception of microfinance) is not yet being sufficiently acknowledged.

8.6 Conclusion

This chapter has explored how Grameen Shakti appears to be enacting a pragmatic form of 'everyday resistance' to the energy development status quo in Bangladesh. It has done so by 'pushing the envelope' on rural energy issues, but has not engaged with controversial or politically-sensitive energy issues (such as those involving elite or national power contestations). A prominent reason for this, it was argued in the chapter, is the dual pressure of Government interference in the rural NGO sector and international norms concerning development. The negative consequences of Grameen Shakti's market-based orientation are its inability to deal with more complex socio-political development issues, and its indirect contribution to the marketisation and depoliticisation of Bangladesh's civil society.

The case of Grameen Shakti casts doubt on the ability of Yunus' social business concept, more broadly, to create an alternative to neoliberal capitalist development. The role of social enterprise as a contributor to civil society's liberalisation, however, does not mean that social enterprises cannot deliver positive benefits to rural people. Nor does it mean that all social enterprise actors are powerless against these more powerful interests. Even less 'alternative' modes of 'everyday resistance', such as strategic alliances with international actors for example, should not be underestimated. As noted in section 8.3.1, in the current contestation between the Awami government and the Grameen social enterprises, the World Bank (among other international actors) has spoken out in favour of Grameen (Economist 2012, February 27; Lee 2012, May 6). The fact that the World Bank might have its own (liberalising) agenda for supporting Grameen does not detract from the ability of these social enterprises to use this relationship for their own benefit. In order for social enterprises to take full advantage of their position, however, they need to become more aware of the national political pressures and international development norms which are currently influencing both individual social enterprises, and social enterprise field itself.

In summary, social enterprise is not a politically neutral concept or entity which can simply slot in-between the market and the third sector. It is an active participant in the creation or maintenance of development norms and power relations, at local, national and international levels. For those powerful institutions which have a vested interest in maintaining the status quo, social enterprise's focus on market mechanisms is the preferred development model. While some Bangladeshi NGOs may be attempting to create "spaces of resistance" (Townsend *et al.* 2004, p.871), and while some of the Grameen social enterprises may be enacting a pragmatic form of 'everyday resistance', it is unlikely that this alone will lead to an alternative development trajectory.

Chapter 9 – Conclusion

9.1 Introduction

In chapter one of this thesis, social enterprise was introduced as an aspiring actor in the current global contestations over legitimate economic constructs. Yunus (2007a) in particular argued that the integration of socially-motivated enterprises into the capitalist economic model would eventually produce a radical change in our global economy, for the betterment of society (see sections 1.2.3 and 2.4.2). While historically, revolutionary and ideological challenges to capitalism, such as Polanyian and Gramscian socialist theories, have been given considerable analysis by political scholars, phenomena such as social enterprise do not often gain the same attention. Meso-level actors, like social enterprises which focus on gradual change, have little chance of impacting global-scale events and powerful actors, making the field a peripheral concern for traditional international political economy (IPE). It was argued, in chapter one, though, that the lessons learned from study of these less consequential actors can be, nonetheless, significant and informative. Social enterprise, and its ability to provide insight into the mechanisms of the global political economy, it was argued, requires a theoretical lens which looks beyond the major world actors and powers, to explore the influence and agency of 'everyday' actors (Hobson and Seabrooke 2007; see section 1.3.1).

Thus, in the chapters above, an 'everyday IPE' (EIPE) approach has been employed to explore social enterprise, its ability to challenge the status quo and its obstacles in delivering an effective development alternative for everyday people. Specifically, this theoretical lens was used to delve and pry into the inner workings of one case study of social enterprise, Grameen Shakti, in order to draw reflections on the broader field. In this concluding chapter we will assess how useful this 'everyday IPE' approach has been in our analysis of Grameen Shakti in the global and Bangladeshi contexts, and what it has revealed about the social enterprise field, and its possible future, in the global development arena.

9.2 Using 'everyday IPE' to explore the role of social enterprise in a global context

9.2.1 Grameen Shakti as representative of the broader social enterprise narrative

As explored in chapter two, there is a dearth of political analysis of social enterprises in developing countries. One exception to this has been the vast literature which has critiqued and explored the international political economy of microfinance (see section 2.4.3). Study of this form of social enterprise has been used by some authors to help uncover attempts by powerful global institutions to engage in neoliberal restructuring of developing economies (Weber 2004b). As argued in section 2.5, though, such analyses of microfinance have generally concentrated more on the role and reach of international actors, with little regard for the choices and actions of the microfinance organisations or their members. In contrast, as detailed above, this thesis has advocated for the importance of analysing the role of 'everyday' (meso-level) actors, not simply as agentless objects of global forces, but as dynamic actors with the ability to comply or resist these powerful influences.

The case study of Grameen Shakti in Bangladesh helps to directly demonstrate the value of an 'everyday IPE' approach to exploring all forms of social enterprise. By analysing Grameen Shakti as both a medium for neoliberal reform, and, importantly, as a social enterprise actor that is deliberately attempting to challenge the global economic status quo, we can, not only draw a more comprehensive picture of the field of social enterprise, but also provide some insight into the contestations over capitalist hegemony which are currently being enacted across the world. In the following we will attempt to link the experience of Grameen Shakti, presented in chapter eight above, with the field of social enterprise in this broader political arena, by exploring both top-down and bottom-up political dimensions.

Viewed within the global context, it is possible to identify two disparate forces or sets of pressures which led to the initiation and development of Grameen Shakti as an energy-focused social enterprise in 1996. On the one hand, Grameen Shakti was established in an attempt by Yunus to create a new form of socially and environmentally-conscious economy (see section 2.4.2). In proclaimed opposition to the free market capitalist approach to development, which he saw as failing the people of rural Bangladesh, Yunus sought to create a solution to energy poverty which focused on renewable, decentralised energy forms, using a social business (rather than profit-driven business) methodology (see sections 3.3.4 and 4.3). That is, Grameen Shakti's beginnings are characterised by a desire to look beyond the capitalist status quo to find an alternative to the inequitable conventional energy paradigm in Bangladesh.

Concurrently, however, there exists a second set of pressures which have directed the course of Grameen Shakti's endeavours. In contrast to Yunus' aim to create a socially-conscious development alternative, the Government of Bangladesh and the World Bank have used Grameen Shakti, and Yunus' social business model, to push their own agendas (see section 8.3). Various forms of social enterprise in Bangladesh have arguably arisen due to the push by these national and international forces to marketise and liberalise the Bangladeshi rural development sector. Grameen Shakti's chosen strategy, of selling energy technologies as a market-based solution to energy development, is arguably partly influenced by these liberalising pressures (see section 8.4.2).

The scenario of Grameen Shakti in Bangladesh, presented above, is representative of the broader social enterprise paradox. The field itself can be said to have similarly arisen in response to two opposing forces. One is the publicly-touted aim of social enterprise to challenge, or at least improve, capitalism (see section 2.2). This is then part of a broader public dissatisfaction with 'unfettered' global markets, with rising pressure for businesses (especially MNCs) to become more socially and environmentally responsible. Social enterprise as a field has possibly developed, then,

in response to a growing public desire to enact a countermovement against the current neoliberal trajectory.[115]

The other factor which has propagated the growth of social enterprise, and in many cases initiated its existence, is in direct opposition to these calls for change. In both western and developing countries we have seen the push for adoption of social enterprise practices, by both governments and international actors, as a step towards minimising government welfare (section 2.3.2) and liberalising the third sector (section 2.4.3). That is, the rise in social enterprises can be said to been a *result* of neoliberal processes, rather than as a reaction against them.[116]

In the microfinance literature, the focus has been primarily on this top-down manipulation of microfinance organisations by neoliberal actors, as noted above. The reality, however, is that both bottom-up and top-down forces have shaped the emergence and direction of the social enterprise field. Indeed, social enterprise's place, as a meso-level set of actors at the centre of these two global pressures, means that the field is an informative (though certainly not sufficient) indicator of the swaying legitimacy of the current neoliberal hegemony. An 'everyday IPE' analysis of the resistance and complicity of individual social enterprises, and the field as a whole, enables us to explore this dynamic. That is, by assessing the type of social enterprises which exist, and by assessing the direction and orientation of these organisations, we can draw some conclusions as to whether it is neoliberal or counter-hegemonic drivers which are currently in ascendance (at least in this arena).

[115] That is, social enterprise, similarly to other movements such as environmentalism (see section 3.2.2), has been (at least in part) motivated by popular, grassroots opposition to the (unregulated) capitalist economic model.

[116] This other social enterprise trend (of co-option by neoliberal actors) also shares parallels with the environmentalist movement (among others) which has been criticised by some for being drawn away from its original alternative roots (see section 3.2.4).

9.2.2 The complicity and resistance of social enterprise actors

As explored in section 2.3.1, in the social enterprise literature capitalist conceptions of development, such as addressing market failure, generating income, creating employment and promoting individual entrepreneurship, are prevalent. The general acceptance and wide-spread use of these terms implies that the neoliberal discourse is influential in the field of social enterprise, and still shapes the 'development construct' that many social entrepreneurs employ. As noted by Gray *et al.* (2003, p. 152): "In its explicit reference to terms such as entrepreneurship and venture capital, social enterprise can appear closely aligned with neo-liberal politics and, as such, can seem contradictory to the aim of promoting social change at the local, institutional and structural level". This indicates that the alternative economic model that many social enterprises espouse has been somewhat neutralised or 'mainstreamed' by the currently dominant capitalist ideology. As argued in the microfinance literature, this suggests that neoliberal hegemony, at least in the most vocal social enterprise circles, is still pervasive.

This scenario does not prove, however, that all social enterprises are equally influenced or compromised by these norms. For some in the field, the neoliberal development discourse is accepted as "common sense" rather than something that may, or may not, need to be contested (Butko 2006, p.82). For others, the choice to engage with the dominant development language is a strategic decision; an attempt to use the prevailing ideology to advance their own causes.[117] There is also, however, a range of less prominent social enterprise hybrids which directly resist the neoliberal development norm and actively pursue alternative economic models (see section 2.2.2). By examining the various forms of 'everyday resistance' to more powerful actors and trends, we can gain a better understanding of the strengths and weaknesses of the social enterprise field. The case study of Grameen Shakti in Bangladesh provides a compelling example of why analysing the chosen form of resistance adopted by an everyday social enterprise is crucial.

[117] With Hobson and Seabrooke's (2007a, pp.16-17) "mimetic challenge" being an example of this.

From one perspective, the neoliberal methodology and discourse employed by Grameen Shakti suggests that the organisation is possibly unintentionally influenced by these development norms. Its focus on technology sales, employment and income-generation, for example, indicates a preference for neoliberal market-led development processes (see section 8.4.2.2). However, the analysis in chapter eight also showed how Grameen Shakti's approach is not so easily described as simply being compromised by neoliberal aims. Its choice to engage in market-compatible energy solutions and a non-political development discourse needs to be considered within both the global and the national development contexts (see section 8.3).

An EIPE lens enables us to explore the various forms of resistance and complicity that everyday actors use in their engagement with powerful norms and actors. This is not to imply, however, that a clear demarcation exists between 'resistance' and 'complicity'.[118] Indeed, in most cases everyday actors like social enterprises will engage in a process of risk assessment to negotiate how best to balance their conflicting agendas (*e.g.* survival versus resistance).[119] In the case of Grameen Shakti, we see a form of 'pragmatic resistance' in its response to the national political pressures exerted by the Government of Bangladesh (see section 8.4.2).

That is, while Grameen Shakti has shown a degree of resistance to the development norms which perpetuate inequality in Bangladesh (such as the conventional focus on large-scale electricity for urban and industrial areas), it has adopted an approach which does not extend beyond the boundaries of acceptable social enterprise behaviour (delivering market-focused technological solutions rather than addressing the political complexities of energy development). While this pragmatic resistance has allowed Grameen Shakti to provide energy services to rural Bangladeshis relatively unimpeded, the organisation's response does not appear to account for how its choices have contributed to the depoliticisation of civil society in Bangladesh, and decreased its

[118] Townsend *et al.* (2004, p.872) similarly refer to their demarcation of ''independent thinking NGOs" and ''compliant NGOs'' as "crude labels", with some NGOs adopting "a complex mixture of acquiescence, strategic subversion and resistance".

[119] Risk assessment is an important part of resistance strategies for both meso-level actors (*e.g.* NGOs and social enterprises) and micro-level actors (*e.g.* marginalised rural people). See Scott (1987, p.245) for an example of the latter.

ability, as a social enterprise, to contribute to an alternative (non-profit-driven) economic market (see section 8.5). In answer to the thesis' central research question, then, the example of Grameen Shakti and social enterprise in Bangladesh demonstrates how a pragmatic response to powerful interests and actors is not adequate for creating real change to the development status quo.

While this may provide an answer to the thesis' central question, it does not, however, encompass the entirety of the thesis' theme. While Grameen Shakti is not necessarily steering away from neoliberal development precepts, it is still nonetheless helping direct the energy sector towards previously neglected energy needs. This thesis adopts the stance that positive change for everyday people is the ultimate aim, rather than assuming that challenging free market capitalism is an end-goal in itself.[120] Grameen Shakti's ability to create solutions to long-held energy issues should not be dismissed, but it also, however, presents a lesson for other social enterprises and the field as a whole concerning the power of hegemonic discourse.

In sum, the thesis case study of Grameen Shakti has helped to demonstrate that the 'everyday' actions and reactions of social enterprises do matter. They can either enhance or help to undermine the legitimacy of the dominant actors. The choices for social enterprises like Grameen Shakti in Bangladesh are difficult. To openly resist the neoliberal and national powers would risk being de-funded and politically harassed. Yet a more pragmatic or survivalist form of resistance against this situation has been shown to support the status quo rather than undermine it. It can be questioned, though, whether Grameen Shakti could further 'push the boundaries' in its activities and choices, to better achieve its social aims, while still pursuing an approach which stops short of fermenting open hostilities with political powers.

[120] If, as Yunus and Polanyi claim, the objective is to re-blend or re-embed the economy into our social structures and daily lives, then it is important to recognise that a non-capitalist or altered-capitalist future is itself just a means to an end. It must also be remembered though, that this 'end' is itself contentious, with the definition of concepts such as development often reflecting the agendas of dominant actors (Weber 2004a), as was explored in the conception of energy development in chapter three.

For other social enterprises around the world, similarly, various levels of awareness, resistance and complicity are no doubt being enacted. Consequently, we can imagine the field as patch-work of organisations which act and react to global pressures and their individual contexts, with a variety of responses. Without a better understanding of the complex political environment in which they are immersed, though, social enterprises will not be able to properly understand how their choices affect their own ability to benefit society. A lack of political analysis in the social enterprise literature, then, is a major impediment to this task.

9.3 Developing an 'everyday IPE' social enterprise literature

As argued in chapter two, the current social enterprise literature does not yet sufficiently explore essential political dimensions in either 'developing' or 'western' country contexts. As noted above, this absence of critical political analysis and the dominance of economic discourse are perhaps indicative of the strength of capitalist ideologies and norms in the broader social enterprise field itself. While academics and practitioners such as Alter (2007) and Dees (2001) have contributed to the 'market failure' focused and economically-inclined social enterprise literature, they are also helping to legitimise and normalise a social enterprise discourse (including definitions and debates) which does not sufficiently address the contending political dimensions which are shaping the field.

A small but growing number of academics, such as Gibson-Graham and Cameron (2007), Gray *et al.* (2003) and Toner *et al.* (2008), have been raising important political questions about social enterprise in western countries and how western governments are using social enterprise to advance liberalising agendas. This appears to have significant parallels with the case study of Bangladesh (see section 9.2.1), and yet generally there is little analysis of the field in a global political context and insufficient political analysis of social enterprise in developing countries. One consequence of this, as explored in the section above, is that social enterprises in both developing and

western country contexts are potentially less informed about their own role in the broader political economy, and how their resistance or complicity is contributing to this scenario.

A similarly serious consequence is the resulting homogenisation of the social enterprise typology. Specifically, there is a rising tendency for emerging social enterprises, and popular definitions of social enterprise, to adopt a market-oriented form. For example, while the radar graphs of social enterprise hybrids in western countries (see figure 2.2) and those from Bangladesh (see figure 7.2) show marked differences in their make-up and priorities, common to both Yunus' and the dominant western definitions is the focus on social enterprise as a market-compatible solution to market failures.

As noted in section 2.2.2, though, this conception of social enterprise is certainly not the only form of social enterprise that exists. According to Minard (2009), there are a plethora of different social enterprise hybrids that inhabit the informal sectors of developing countries, which do not fit within the common definitions of the field. Questioning the current position of the social enterprise field, by investigating its political dimensions, then, may give greater voice to forms of social enterprise which are challenging market norms, and creating new economic spaces and forms of 'everyday resistance'.

9.4 The limitations of an 'everyday IPE' approach

The above section has attempted to argue that an 'everyday IPE' approach is needed for exploring phenomena such as social enterprises in a developing country. There are still limitations, however, on what an international political economy approach, even an 'everyday' one, can tell us about this field. While EIPE is useful for analysing the role of everyday actors in global movements and national contexts, it is limited in its ability to explore the practicalities and potential of social enterprises at a local level. That is, as was argued in section 1.3.1, we need to consider not only the international political

economy, but also the local socio-political factors which influence a social enterprise's role. For social enterprises operating in the formal, and especially in the informal sectors of Bangladesh and other developing countries, these local elements are just as significant as the global and national contestations which have been described above.

In Grameen Shakti's attempts to provide energy solutions for rural households, it was shown that local patriarchal norms and wealth hierarchies interact with market mechanisms to exacerbate an already challenging market environment (see sections 7.3 and 8.2). Cultural patriarchal norms concerning 'women's work' and the value of 'women's technologies', for example, had significant consequences for Grameen Shakti's market and social-based initiatives (namely, selling ICS and employing women in sales roles). Analysis of local socio-political dimensions, such as these, helps to reveal the limited ability of a social enterprise to enact change while working within the current market environment.

Grameen Shakti's limited ability (and motivation) to follow-through with its pro-poor and pro-women options, however, is also connected to broader political issues. Local patriarchal customs, for example, may be reinforced by capitalist norms concerning the gendered division of labour (see section 3.5); elite capture of services (*e.g.* the mini-solar panels) is connected with broader patronage systems and a neoliberal funding arrangement that emphasises Grameen Shakti's financial self-sufficiency over its ability to reach the poorest.[121] Thus it is only with a more comprehensive scope, encompassing the social (cultural), political and economic aspects of the local, national and international arenas, that a meso-level actor like social enterprise can be understood.

This thesis, then, adds to the calls for 'everyday IPE', and IPE generally, to expand its horizons and systematically incorporate more 'hidden' political processes (see section 1.3.1). A feminist lens, for example, has been shown here to be a vital component of IPE, necessary for highlighting and understanding various complex issues that affect

[121] For example, while Grameen Shakti receives funding from the World Bank to create a solar market, it does not receive any extra funding to address more marginalised energy needs.

both the everyday and global political economy. This finding also, then, supports calls for a more interdisciplinary approach to research phenomena such as social enterprise.[122] The social enterprise literature needs to not only extend into more 'everyday IPE' analyses, but needs to do so with a feminist lens and a better anthropological and sociological understanding of the field, in a variety of disparate local contexts.[123]

9.5 Conclusion

In order to contribute to the literature on the political economy of social enterprise, this thesis has attempted to prove that exploration of everyday actors is essential: for understanding the various different levels at which power dynamics play out; for appreciating the role of complicity and resistance that individual social enterprises can adopt; and for being able to synthesise these findings with the broader global trends in the field. The analysis in this thesis, of just one social enterprise case study, is indicative of the insight which could be drawn from further political analysis of social enterprise in various countries and contexts across the world.

It was also demonstrated, in the sections above, how social enterprise researchers are not divorced from the global contestations that surround the field of social enterprise. The lack of political analysis of social enterprise, especially at an international level, is a contributing factor to the state of the field and its position within the broader political economy. For those wishing to encourage a diverse range of social economy experiments, in order to imagine and test a variety of alternatives to the current economic norms, then the social enterprise literature needs a new direction; one in which the ideological, political and socio-cultural complexities of the field are given more light.

[122] See Weber (2010, p.117) and Burawoy (2003, p.250) for further calls for a "sociological turn" in IPE.

[123] For the Grameen Shakti case specifically, future in-depth surveys and research into the energy needs of women and marginalised people, the impact of social enterprise on their daily lives and the 'hidden' local, national and international politics that surround these issues, would greatly add to the analysis presented in this thesis.

Appendix A – Statistical data tables

District / Zila	Ave # SHS sold per month per lakh HHs	Ave # ICS sold per month per lakh HHs	Ave # Biogas sold per month per lakh HHs
Bagerhat	28.3	3.3	0.8
Bandarban	117.9	14.0	2.0
Barisal	24.1	3.1	0.1
Bhola	40.8	0.5	0.0
Bogra	12.3	1.5	0.8
Borguna	38.3	5.2	0.1
Brahmanbaria	12.7	1.9	0.2
Chandpur	44.0	5.3	0.7
Chittagong	19.7	2.0	0.2
Comilla	10.9	1.3	0.4
Cox'sbazar	15.5	4.1	0.8
Dinajpur	6.3	2.6	2.5
Faridpur	22.6	3.6	0.3
Gaibandha	11.7	0.8	0.4
Gazipur	21.8	2.9	1.7
Gopalganj	38.7	1.3	0.0
Habiganj	83.4	5.2	1.5
Jamalpur	19.4	0.8	0.4
Jessore	6.9	1.1	2.6
Joypurhat	18.7	2.2	8.2
Keshoreganj	31.3	2.3	0.7
Khagrachhari	86.4	8.6	2.6
Khulna	36.5	5.6	0.8
Kurigram	27.9	4.9	1.1
Lalmonirhat	30.0	7.7	1.7
Laxmipur	30.4	2.9	3.3
Madaripur	36.8	0.5	0.1
Manikganj	28.9	2.3	1.2
Moulavibazar	43.9	2.7	1.1
Mymenshing	23.4	3.9	1.0
Narsingdi	31.7	1.6	0.4
Netrokona	36.1	5.5	0.8
Noakhali	25.7	3.1	0.4
Nowgaon	24.4	2.6	0.6
Pabna	6.5	0.7	3.6
Panchaghar	17.6	6.3	1.1
Patuakhali	89.9	10.0	0.1
Pirojpur	60.0	2.8	0.1
Rajbari	31.3	0.6	2.3
Rajshahi	16.9	0.7	0.5
Rangamati	93.2	3.8	1.6
Rangpur	7.7	1.3	0.5
Satkhira	48.0	4.6	1.2
Serajganj	21.6	2.9	2.2
Shariatpur	99.9	7.6	0.3
Sherpur	42.3	2.7	0.4
Sunamganj	97.9	8.9	1.6
Sylhet	22.2	3.6	0.7
Tangail	28.2	4.1	0.4
Thakurgaon	22.5	3.6	2.4

Table A.1: Grameen Shakti's 2008 sales figures for solar home system (SHS), improved cook stove (ICS) and biogas plant. (lakh HHs = 100,000 households) Data source: Grameen Shakti (2009) internal records.

Division / Zila	Lighting - % HHs using …		Livestock - Ave # … per HH		Cooking Fuel - % HHs mainly using …		
	Kerosene	Electricity	Cattle	Fowl	Straw	Wood	Gas
Bagerhat	70.5	29.5	0.9	3.9	32.7	52.3	1.6
Bandarban	58.0	42.0	1.5	7.1	5.7	87.0	0.5
Barisal	82.9	17.2	0.9	4.9	47.3	45.9	3.0
Bhola	52.8	47.3	0.8	6.1	47.3	42.5	0.3
Bogra	79.8	20.2	1.0	4.9	55.1	37.7	3.0
Borguna	60.6	39.4	1.6	6.8	43.1	51.4	0.4
Brahmanbaria	40.4	59.7	0.9	4.6	47.6	35.4	9.5
Chandpur	58.6	41.4	0.7	4.4	67.0	21.5	9.0
Chittagong	32.4	67.7	0.5	2.4	6.0	62.3	23.1
Comilla	37.8	62.2	0.9	4.8	60.7	26.0	8.5
Cox'sbazar	76.0	24.0	0.9	6.5	13.7	67.5	3.7
Dinajpur	72.8	27.2	1.4	5.5	78.8	16.8	0.6
Faridpur	64.6	35.4	0.9	3.4	64.3	29.7	1.1
Gaibandha	79.0	21.0	1.0	4.2	65.6	31.7	0.8
Gazipur	32.3	67.7	0.7	2.5	17.8	57.3	17.1
Gopalganj	48.9	51.1	0.9	2.8	31.7	39.4	0.9
Habiganj	68.8	31.2	1.2	3.6	22.3	69.1	5.9
Jamalpur	75.8	24.2	0.9	3.6	76.1	15.2	1.5
Jessore	49.1	50.9	1.2	4.9	24.1	70.1	0.8
Joypurhat	58.8	41.3	1.2	6.1	63.2	30.2	2.1
Keshoreganj	59.5	40.5	0.9	3.6	45.9	42.4	8.6
Khagrachhari	44.7	55.4	1.1	5.4	2.2	96.5	0.3
Khulna	74.7	25.3	0.6	1.8	25.0	62.6	6.1
Kurigram	92.1	7.9	1.1	4.4	57.2	40.0	0.0
Lalmonirhat	72.1	27.9	1.1	3.5	42.6	55.4	0.1
Laxmipur	92.6	7.5	0.7	5.1	38.3	57.8	2.1
Madaripur	62.7	37.3	0.9	4.6	58.0	22.0	0.1
Manikganj	56.4	43.6	0.9	3.1	50.1	43.7	3.9
Moulavibazar	63.3	36.7	1.1	3.4	34.3	51.6	9.1
Mymenshing	73.7	26.3	1.0	3.8	44.2	47.7	5.2
Narsingdi	73.7	26.3	0.7	4.2	22.1	56.5	19.0
Netrokona	41.9	58.1	1.1	3.5	26.0	69.8	1.9
Noakhali	76.3	23.7	0.7	5.7	45.3	37.6	10.2
Nowgaon	52.0	48.0	1.3	4.9	70.6	25.6	0.9
Pabna	56.0	44.0	0.9	3.6	41.5	35.0	2.6
Panchaghar	84.6	15.4	1.4	4.2	79.0	17.6	0.0
Patuakhali	82.2	17.8	1.5	7.7	59.0	37.6	0.6
Pirojpur	67.0	33.0	1.1	5.7	33.2	65.1	0.2
Rajbari	75.3	24.7	1.0	3.3	45.4	49.8	0.6
Rajshahi	52.2	47.8	0.7	3.0	57.9	36.4	1.4
Rangamati	52.8	47.2	1.1	6.1	9.5	76.3	1.1
Rangpur	71.4	28.6	1.0	4.3	48.4	48.3	1.6
Satkhira	71.7	28.3	1.1	3.8	29.7	67.8	0.5
Serajganj	66.6	33.4	0.8	3.6	53.6	26.9	1.8
Shariatpur	75.5	24.5	0.8	5.2	48.9	47.8	0.2
Sherpur	53.1	46.9	0.9	3.3	60.3	36.0	1.3
Sunamganj	80.0	20.0	1.3	3.4	30.7	56.2	1.8
Sylhet	41.2	58.8	1.1	4.2	13.4	58.2	24.6
Tangail	65.1	35.0	1.0	4.0	71.5	18.7	1.0
Thakurgaon	82.2	17.9	1.6	4.2	81.0	15.8	0.0

Table A.2: Lighting, livestock and fuel statistics for Bangladesh.

Data sources: Lighting data, 2006, sourced from BBS (2007, pp.160-161). Livestock data, 1996, BBS (2008, pp.168-169). Cooking Fuel data, 2006, BBS (2007, pp.162-163).

District / Zila	**Income quintiles-** Percentage of households with a yearly income of ...				
	Tk. 0 - 2000	Tk. 2001 - 4000	Tk. 4001 - 6000	Tk. 6001 - 8000	Tk. 8000 +
Bandarban	34.9	42.4	12.8	6.1	3.8
Barisal	31.8	43.2	16.3	4.3	4.4
Bogra	41.7	41.6	10.3	3.0	3.5
Chittagong	11.9	42.0	23.9	9.3	13.0
Comilla	19.0	42.3	22.3	7.3	9.1
Dinajpur	54.3	31.7	8.2	2.9	2.9
Faridpur	28.6	42.8	17.4	5.8	5.4
Jamalpur	53.5	32.6	8.3	2.5	3.1
Jessore	32.1	46.6	12.9	4.6	3.8
Keshoreganj	33.4	40.1	14.1	5.8	6.6
Khagrachhari	18.8	53.6	18.8	6.6	2.2
Khulna	37.4	42.8	12.2	4.2	3.5
Mymenshing	43.6	35.5	11.4	4.6	4.9
Noakhali	20.7	39.6	21.1	9.1	9.6
Pabna	36.1	41.7	13.3	3.9	5.0
Patuakhali	39.5	36.7	13.3	5.7	4.9
Rajshahi	47.9	33.4	11.2	3.6	4.0
Rangamati	16.4	47.4	18.8	8.6	8.7
Rangpur	54.9	30.4	9.0	3.3	2.5
Sylhet	21.0	42.6	18.0	7.4	11.0
Tangail	45.9	37.0	10.6	3.2	3.3

Table A.3: Percentage of households in each income quintile in Bangladesh (in Taka).
Data source: Income, 2003 data, BBS (2003, p.217).

District / Zila	Population data		Grameen Bank (GB) data
	Household Density	Literacy Rate	% Villages with GB branches
Bagerhat	81.7	58.7	92.1
Bandarban	13.4	31.7	11.7
Barisal	169.9	57.0	84.6
Bhola	87.9	36.9	100.0
Bogra	237.5	42.9	85.3
Borguna	98.3	55.3	100.0
Brahmanbaria	222.8	39.5	85.3
Chandpur	254.5	50.3	100.0
Chittagong	234.8	55.6	100.0
Comilla	268.4	46.0	87.4
Cox'sbazar	118.8	30.2	86.2
Dinajpur	168.7	45.7	100.0
Faridpur	168.6	40.9	54.2
Gaibandha	226.4	35.7	100.0
Gazipur	257.4	56.4	96.6
Gopalganj	149.0	51.4	68.9
Habiganj	122.1	37.7	61.9
Jamalpur	236.8	31.8	98.6
Jessore	203.9	51.2	100.0
Joypurhat	211.6	49.6	97.0
Keshoreganj	195.8	38.3	65.4
Khagrachhari	40.4	41.8	25.5
Khulna	113.6	57.8	69.8
Kurigram	173.1	33.4	77.3
Lalmonirhat	197.1	42.3	100.0
Laxmipur	198.3	42.9	100.0
Madaripur	202.3	42.4	54.7
Manikganj	200.2	41.0	80.5
Moulavibazar	104.6	42.1	48.5
Mymenshing	221.2	39.1	100.0
Narsingdi	337.8	42.9	96.7
Netrokona	149.1	34.9	62.5
Noakhali	127.9	51.7	100.0
Nowgaon	157.2	44.4	85.4
Pabna	189.0	42.4	98.3
Panchaghar	127.4	43.9	100.0
Patuakhali	89.2	51.5	100.0
Pirojpur	178.2	64.3	100.0
Rajbari	171.2	39.8	79.3
Rajshahi	209.0	47.5	81.5
Rangamati	16.8	43.6	24.0
Rangpur	244.6	41.9	100.0
Satkhira	101.3	45.5	74.6
Serajganj	225.3	40.6	82.5
Shariatpur	180.8	38.9	50.0
Sherpur	221.2	31.9	95.2
Sunamganj	95.3	34.4	45.5
Sylhet	121.4	45.6	44.7
Tangail	214.3	40.5	100.0
Thakurgaon	142.5	41.8	100.0

Table A.4: Bangladesh population and Grameen Bank statistics.

Data sources: Household density (#HHs/land area of the District), 2001, BBS (2001). Literacy rate, 2001, BBS (2001). Percentage of villages with Grameen Bank branches, 2006, BBS (2008, pp.401-402).

Appendix B – Statistical data analysis

Appendix B.1: Calculating technology sales' Trend Lines

Appendix B.1 details the statistical analysis involved in creating the ICS, SHS and biogas plant sales' Trend Lines in figure 6.7, figure 6.10 and figure 6.11 respectively.

Regression analysis for the ICS sales' Trend Lines

For the ICS sales, non-linear regression analysis was performed using XLSTAT, using the function:

$$y=aexp(bx+c) + -aexp(c).$$

The variable x was the number of years since the product had started being sold; the variable y was the sales values of the ICS. The constant (-aexp(c)) was chosen to force the trendline to hit (0,0), to ensure that the number of ICS sold in 2005 was zero.

Resulting best-fit line equations:-

$$ICS\ (trend\ without\ 2010)= 5817.3*Exp(0.845*Years+-1.727) - 1034.1$$

$$ICS\ (trend\ with\ 2010) = 6944.6*Exp(1.160*Years +-2.777) - 432.1$$

These exponential functions were found to be statistically robust, with $R^2>0.98$ for both.

Regression analysis for the SHS sales' Trend Line

For the SHS sales, non-linear regression analysis was performed using XLSTAT, using the function:

$$y=aexp(bx+c) + -aexp(c).$$

The variable x was the number of years since the product had started being sold; the variable y was the sales values of the SHS. The constant (-aexp(c)) was chosen to force the trendline to hit (0,0), to ensure that the number of SHS sold in 1996 was zero.

Resulting best-fit line equations:-

SHS trend= 67.1*Exp(0.521*Years + 0.709) - 136.4

The exponential function was found to be statistically robust, with R^2>0.98.

Regression analysis for the Biogas Plant sales' Trend Line

For the biogas plant sales, non-linear regression analysis was performed using XLSTAT, using firstly:

y=aexp(bx+c) + -aexp(c).

The variable x was the number of years since the product had started being sold; the variable y was the sales values of the biogas plant. The constant (-aexp(c)) was chosen to force the trendline to hit (0,0), to ensure that the number of biogas plants sold in 2004 was zero.

Resulting best-fit line equations:-

Biogas trend (exponential) = 52.4*Exp(0.363*Years+2.693) -774.7

Biogas trend (polynomial)= 77.6*Years-79.3*Years^2+102.7*Years^3-10.8*Years^4

The biogas plant exponential regression equation did not result in a statistically 'good fit' with the biogas plant sales data. Linear regression produced a better 'fit' (indicating that biogas plant sales are linearly increasing, rather than exponentially increasing, as expected from a visual representation of the sales data). It was a polynomial function, however, that gave the best statistical regression results. This, interestingly, suggests that biogas plant sales will not necessarily continue to increase in the future (though there is too little data to make any hypotheses).

When plotting all three graphs (for ICS, SHS and biogas plant sales) on the same axes, x was adjusted so that it represented comparative Years.

Appendix B.2: Comparing sales in Grameen Shakti's new branches

Appendix B.2 details the statistical analysis involved in comparing the number of technologies sold in Grameen Shakti's new branches in 2008, as visually represented in figure 6.9.

A t-test and F-test analysis, to compare the sales figures across the new branches, were performed using XLSTAT. The analysis results, in table A.5 below, demonstrate that the difference in sales between SHS and either the ICS or biogas plant were statistically significant (both in terms of mean and variance across the different branches). The difference in sales between the ICS and biogas plant, however, was not found to be statistically significant.

Test		**Comparing ICS and SHS**	**Comparing Biogas and SHS**	**Comparing ICS and Biogas**
F-test (for variance)	**F-value**	0.013****	0.024****	1.897
	p-value (two-tailed)	< 0.0001	< 0.0001	0.243
t-test (for means)	**t-value**	-7.37****	-7.770****	-2.330*
	p-value (two-tailed)	< 0.0001	< 0.0001	0.027

*statistically significant to p<0.05 ****statistically significant to p<0.0001

Table B.1: Comparing SHS, biogas plant and ICS sales in Grameen Shakti's new branches in 2008. Data source: Grameen Shakti (2009)

Appendix B.3: Factor Scores

District	Factor Scores	
	Poverty Factor	Rural Factor
Bagerhat	-0.791	0.103
Bandarban	-3.808	3.817
Barisal	0.329	0.058
Bhola	-0.070	0.916
Bogra	1.154	0.134
Borguna	-0.047	2.270
Brahmanbaria	-0.038	-1.309
Chandpur	1.715	-2.082
Chittagong	-1.945	-4.816
Comilla	0.790	-1.719
Cox'sbazar	-1.513	1.389
Dinajpur	2.409	1.523
Faridpur	0.767	-0.029
Gaibandha	1.980	0.194
Gazipur	-1.714	-3.910
Gopalganj	-0.705	-0.715
Habiganj	-1.730	0.598
Jamalpur	2.585	-0.311
Jessore	-1.190	0.021
Joypurhat	1.187	0.505
Keshoreganj	-0.215	-0.983
Khagrachhari	-4.239	1.673
Khulna	-1.460	-1.493
Kurigram	1.161	1.308
Lalmonirhat	0.561	0.193
Laxmipur	0.849	-0.088
Madaripur	0.938	-0.014
Manikganj	0.157	-0.823
Moulavibazar	-1.359	0.101
Mymenshing	0.597	-0.488
Narsingdi	-0.390	-2.795
Netrokona	-1.897	0.112
Noakhali	0.665	-0.587
Nowgaon	1.114	0.847
Pabna	0.323	-0.781
Panchaghar	2.480	1.708
Patuakhali	1.037	3.019
Pirojpur	-0.338	0.342
Rajbari	0.182	0.247
Rajshahi	0.572	-1.492
Rangamati	-3.468	2.036
Rangpur	1.222	-0.348
Satkhira	-1.263	0.933
Serajganj	1.134	-0.713
Shariatpur	0.025	0.681
Sherpur	0.993	-0.697
Sunamganj	-1.039	1.563
Sylhet	-3.089	-1.606
Tangail	2.139	-0.241
Thakurgaon	3.244	1.749

Table B.2: Factor Scores for Poverty and Rural Factors, representing socio-economic differences across districts in Bangladesh.

Appendix C – Interview questions

Interview Leading Questions – Village customer interviewees

Interviewing (open format) the users/owners of Grameen Shakti technologies in rural villages in Bangladesh.

The interviewee/s can choose not to answer any question at any time.
The interviewer will withdraw any question which appears to make the interviewee/s uncomfortable.

Leading Question 1: Questions pertaining to the personal situation of the interviewee, their energy needs, and the demographic of the village in which they live.

- What is your age, main employment, marital status, number of children, relative wealth, education level?
- What types of energy do you use most often? Which energy form is the most expensive? Which energy fuel use and/or collection is the most time consuming? Are any energy fuels difficult to acquire? Which energy forms would you most like improved?

Leading Question 2: Questions about the use of Grameen Shakti technology by the interviewee and others.

- Who uses the technology – you, relatives, customers, friends, senior members of the village, others?
- How often do you and others use the technology? What time of the day, or year, or month *etc* do you and others most/least use the technology?
- What type of things do you and other people use the technology for? What is it mainly used what for (and when)?

Leading Question 3: Questions about how the technology was initially acquired.

- How did you find out about the technology? Did Grameen Shakti come to your village or did you initiate contact with Grameen Shakti?

- Did you think the technology was a good idea straight away? Did anything change your mind?
- How much did your technology cost to purchase?
- Did you get a loan from Grameen Shakti (or other) for your purchase?

Leading Question 4: Questions about the loan.

- What is your loan arrangement with Grameen Shakti (if existing)? How much money was borrowed? Repayment rate? Interest rate?
- Are you happy or unhappy with your loan situation?
- Do you have any loans with the Grameen Bank?

Leading Question 5: Interviewees relationship with Grameen Shakti.

- What relationship did you or your family have with Grameen Shakti before this technology?
- Has this technology changed your relationship with Grameen Shakti? How?

Leading Question 6: Questions about how the technology is maintained.

- How often do you have problems with the technology? Do you find it easy to use?
- Has the technology ever broken down? How often? Was it difficult to fix? Did you need to get outside help? Was Grameen Shakti helpful?
- Does the technology need any maintenance? How often? Does it cost you money? Who are the maintenance people (Grameen Shakti?)? Are they timely?

Leading Question 8: Enquiring about the interviewees opinions.

- Has the technology had a mainly positive or negative impact on you, your family, or the rest of the village?
- Would you recommend the technology to other people? Who would you recommend it for?

Interview Leading Questions – Grameen Shakti management interviewees

Interviewing (open format) the managers and other senior members of Grameen Shakti, about their business plans and social goals for the dissemination of Grameen Shakti technologies in rural Bangladesh.

The interviewee/s can choose not to answer any question at any time.
The interviewer will withdraw any question which appears to make the interviewee/s uncomfortable.

Leading Question 1: Questions about how Grameen Shakti acquires its technologies. For example;

- Which companies does Grameen Shakti work with in order to acquire the technology?
- Are the prices paid to these companies subsidised for Grameen Shakti?
- Does Grameen Shakti have any plans to make any of these technologies in-country?
- Does Grameen Shakti use any financial assistance from other organisations to fund the dissemination of solar? *e.g.* World Bank?

Leading Question 2: Questions about how Grameen Shakti disseminates technology in rural areas.

- How does Grameen Shakti inform rural people about solar and related technologies?
- How are loans approved or not approved? What are the criteria?
- How are these loans similar or different to the usual microfinance loans? Size, repayment rate, interest rate, group lending, timeframe?
- What is Grameen Shakti's policy for customers who cannot make their repayments?

Leading Question 3: Questions on who Grameen Shakti targets for solar or related technologies.

- Which villages do you target for these technologies? Location, size, wealth?
- Are these villages which already have Grameen Bank microfinance or other services?
- Which villagers do you target for these technologies? Wealth, gender, employment?
- Are these villagers who are already Grameen Shakti customers?
- How do you think these target villages and customers will change in the future?

Leading Question 4: Questions on how Grameen Shakti maintains and repairs solar and related technologies.

- What Guarantees, Warranties are given to Grameen Shakti customers?
- How are repairs and maintenance provided?

Leading Question 5: Questions on Grameen Shakti's social business status.

- What is the importance of Grameen Shakti being a non-profit organisation?
- Is Grameen Shakti motivated by providing energy solutions for rural people, by Climate Change, other?
- Does Grameen Shakti have a different social business model than Grameen Bank?

Leading Question 6: Questions about the future of Grameen Shakti.

- Does Grameen Shakti intend on becoming more financially viable in the future? Will it focus on profit for either commercial gain or to become a self-funding non-profit enterprise?
- What is the future direction of Grameen Shakti?

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