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Debt Financed Migration to Consumption Smoothing: Tracing the Link between
Migration and Food Security in Bangladesh

by

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August 2016

Dissertation

Submitted to the Department of Geography and Environmental Studies in Partial
Fulfillment of the Requirements for the

Doctor of Philosophy in Geography

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(Copyright clearance is attached in the Appendix)

Abstract

This dissertation is primarily focused on migration and food security linkages, more specifically the impact of migrants' remittances on household food security, and the role of debt in financing migration. Using a multi-methods approach the dissertation focuses on the household level, but also sheds light on the related policy landscape linked to these resource issues. The dissertation consists of seven chapters, with four research finding chapters that are each self-contained and interdisciplinary. Each of these four chapters adds conceptually and empirically to the existing literature on migration and development.

Chapters one and two provide the introduction and literature review. Chapter three presents the findings on the impact of remittances on household food security. Using different food security indicators and scientifically validated measurement tools, this research shows that households receiving remittances are better off than non-receiving households in terms of food security conditions. It also shows that cash remittances are spent to maintain adequate food consumption levels, and therefore improve the ability to acquire a sufficient quality and quantity of food to meet household members' nutritional requirements. Moreover, remittances help to improve households' access to important nutritional inputs, provide dietary diversity and allow the households to cope with shocks that threaten its food security status.

Chapter four investigates the impact of remittances on households' food security using quantitative models. Two Stage Least Square Instrumental Variable Method (2SLS-IV) and Generalised Method of Moments (GMM) are used for this study. Estimated results indicate that remittance influences the household's food security conditions differently than other income sources. In general, remittances reduce food-related uncertainties and help the households to counterbalance food-related shocks and coping strategies. Moreover, remittances improve the

dietary diversity which reflects the quality of diet and adequate micronutrient intake by the remittance receiving households. Overall, the results show that migration and the consequent remittances increase the probability of a household being food secured.

Chapter five presents a study on debt-financed migration and related resource backwash (reverse resource flows) and suggests that although migration has become an essential livelihood strategy for households in rural Bangladesh, in order to finance migration household deplete significant resources, land and other precautionary assets (assets that protect against risk) in order to gain access to migration opportunities. This research shows that debt is a critical component of the migration system in Bangladesh. Although households adopt a migration strategy to counterbalance income uncertainty, the migration system itself creates extreme precarity as households become riddled with migration related debt. Tragically often it takes the entire migration episode to service the debt.

Chapter six explores the policy landscape related to migrants' remittances such as remittance infrastructure, public and private agents and institutions, microfinance institutions in the remittance market, and legal and regulatory frameworks relevant to remittance governance. This chapter demonstrates that remittance governance in Bangladesh is largely focused on shifting remittances away from informal channels to the formal banking system. To maximize the potential benefits of remittances it is necessary to direct individual and collective remittances toward productive investment and to use remittances to promote financial inclusion for marginal groups. Chapter seven concludes.

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Statement of Originality

This is to certify that to the best of my knowledge, the content of this thesis is my own work.

This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Mohammad Moniruzzaman

August 2016

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List of Acronyms and Abbreviations

ADB	Asian Development Bank
BBS	Bangladesh Bureau of Statistics
BDTK	Bangladeshi Taka
BHIES	Bangladesh Household Income and Expenditure Survey
BHRS	Bangladesh Household Remittance Survey
BIHS	Bangladesh Integrated Household Survey
BMET	Bureau of Manpower Employment and Training
BRAC	Bangladesh Rural Advancement Committee
CIP	Commercially Important Person
CPI	Corruption Perception Index
CSI	Coping Strategies Index
DFID	Department for International Development
EHS	Hansen and Singleton
EPI	Expanded Programme on Immunisation
FAO	Food and Agricultural Organisation
FCS	Food Consumption Score
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLM	Generalised Linear Model
GMM	Generalised Method of Moments
GOB	Government of Bangladesh
HAZ	Height for Age Z
HDDS	Household Dietary Diversity Score
HFIAS	Household Food Insecurity Access Scale

HFIPA	Household Food Security Access Prevalence Indicator
HHS	Household Hunger Scale
HIES	Household Income and Expenditure Survey
ICRG	International Country Risk Guide
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
IMF	International Monetary Fund
IOM	International Organization for Migration
IV	Instrumental Variable
MDGs	Millennium Development Goals
MFI	Micro Finance Institution
MH	Migrant Household
MIRAB	Migration, Remittances, Aid, and Bureaucracy
MoU	Memorandum of Understanding
MRA	Microcredit Regulatory Authority
MTO	Money Transfer Operators
NBR	National Board of Revenue
NELM	New Economics of Labour Migration
NGO	Non Government Organisation
NMH	Non-Migrant Households
NRB	Non-Resident Bangladeshi
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Square
PKB	Probashi Kallayan Bank
RSP	Remittance Service Providers

SADC	Southern African Development Communities
SD	Standard Deviation
SDGs	Sustainable Development Goals
UAE	United Arab Emirates
UN	United Nations
UNO	Upazila Nirbahi Officer
UP	Union Parishad
WDI	World Development Indicator
WFP	World Food Programme
WHO	World Health Organisation

Chapter 1 Introduction

1.1 Background and Motivation

The impact of international migration on development is a top priority on the international development agenda. Academic communities are investigating and trying to gain more clarity on the links between migration and development by providing empirical data, yet the majority of findings are inconclusive. This dissertation endeavours to broaden our understanding of the development consequences of circular and temporary migration from the Global South by examining migration and food security links, an area relatively unexplored until recently. Migration may influence the household's food security conditions through a number of channels. Remittances, money and goods sent by the migrant workers, are the most substantial, measurable and tangible link between migration and development. Remittances may improve households' economic access to safe sufficient and nutritious food, so understanding whether, and to what extent, migration influences household food security is an important contribution to the migration-development debate.

In investigating the impact of remittances at the household level, this dissertation took an empirically-grounded, multi-method and interdisciplinary approach. While the main focus of the dissertation is to investigate the impact of migrants' remittances at the household level, it also looked at the magnitude of reverse resource transfers from households in order to finance migration. If migration financing is significant compared to the remittances households receive, then the household depletes pecuniary productive assets such as agricultural land and financial savings, which can diminish the economic well-being of the household members left behind. As these resources are an integral variable of the households' food security function, their depletion

can have an adverse effect on food security. Therefore, this research addresses whether remittances compensate for migration related resource outflows. The remainder of this chapter proceeds as follows, section 1.2 describes the statement of the problem, section 1.3 details objectives, and research questions, while section 1.4 presents the contribution of this study. Section 1.5 explains the research context, and section 1.6 outlines the structure of the dissertation, with section 1.7 concluding.

1.2 Statement of the Problem

Significant research has tended to view migration as a livelihood strategy used by households to diversify, stabilize and gain access to higher income sources. The literature also suggests that remittances are the central and most critical component of such strategies. However, theoretical and empirical work on the influence of remittances has produced mixed results. Since remittances are private resource transfers and spent partly on consumption and partly on investment, their impact on development is complex. An array of research shows that remittances are potential sources of savings, investment, and asset accumulation, thereby reducing poverty, and providing a safety net that reduces households' vulnerability to shocks (Adams & Page, 2005; Acosta et al., 2008). Conversely, a body of literature argues that remittances may be harmful to the receiving end through the 'moral hazard' problem; that remittances are non-market private transfers and windfall income to the household and as such may reduce the recipient's labour market and civic participation (Chami et al., 2003).

The role of migrants' remittances in improving food provisioning and food security at the household level has been neglected in the literature on remittances. How migrant remittances improve household well-being, and more specifically food security, is critically dependent on the specific circumstances and patterns of migration, the existing structural constraints, migration

related costs, the magnitude of remittances and the remittance utilisation pattern. Data and empirics are required to establish the possible pathways through which migration influences household food security. The consequences of migration and remittances for household wellbeing, and more specifically the influence of remittances on household food security, warrant further investigation for at least five reasons.

First, economic literature suggests that remittances are mostly used for consumption and basic livelihood needs; therefore, they may not have a significant impact on development. Such a viewpoint fails to recognize the consumption smoothing and the risk coping role remittances play in food and nutritional insecurity. Migrant remittances may have a direct income effect on food-related consumption expenditure and may improve households' economic access to safe, sufficient and nutritious food. Remittances may improve household dietary quality and diversity. Moreover, remittance-receiving households may be better able to withstand food-related shocks, such as food price hikes. Household 'consumption stability' through remittances suggests an important human development impact. However, this area of investigation is still underdeveloped, especially in the Asian context.

Second, since remittances are not purely economic transactions and various social interactions are linked with these transfers, they are more stable than are other types of financial transfers. Remittances are altruistic private transfers that have proven to be less volatile than other financial flows. For example, while foreign direct investment dropped one-third and private portfolio flows almost totally collapsed during the global financial crisis in 2009, remittances were a resilient source of external financing to developing countries (Ratha, 2009). On the other hand, Food and Agriculture Organisation (FAO) reports that the global economic and financial crisis pushed an additional 100 million people into hunger in 2009, which brings the overall number of

undernourished people in the world to over one billion (FAO, 2009). Economic crisis threatens household livelihoods and food security, but remittance-receiving households do not have to adopt as many or the same type of food provisioning coping strategies compared to non-receiving households. While understanding how remittances might protect households from food-related uncertainties is an important issue, it has been largely underexplored in the migration-development debate.

Third, some attention to the variability of income sources and household composition is needed. When the household receives remittances it becomes part of a household's budget. There is a considerable debate whether income from remittances influences household expenditure patterns differently than other regular income sources. Remittances are often viewed as 'fungible' and are spent in the same way as other sources of income. The notion behind this argument is that a dollar of remittance income should be treated by the household just like a dollar of wage income (Adams & Cuecuecha, 2010, Castaldo & Reilly, 2007, Zarate-Hoyos, 2004, Randazzo & Piracha, 2014). On the other hand, some research argues that remittances are transitory income targeted and attached to a specific type of expenditure, which may then have effects that are different than other regular income (De & Ratha, 2012; McKenzie & Sasin, 2007). If remittances are fungible, then the expenditure pattern on food provisioning will be no different than that of any other income. To address this question it is necessary to use rigorous quantitative tools and models in order to separate remittances from other income sources to determine if remittances differentially influence household food security. Additionally, variability in expenditure may also be linked to the receiving households' demographic composition (e.g. male headed, female headed) (Perrons, 2009; Williams, 2009). Migration may cause an increase in female-led households in the sending region, raising the importance of gender as a critical component in migration and food security

links. Various intra-household bargaining models and related empirical research has shown that an increase in household income does not necessarily lead to improvement in household well-being and food security of all household members. The expenditure pattern of remittances in male-headed and female-headed households may be heterogeneous. When females control the budget they may spend more on items such as food, education, health and nutrition services. On the other hand, it is argued that the male-headed household spends significantly less on food and more on housing and other consumer durable goods (Gobel, 2013; Quisumbing & McClafferty, 2006). Therefore, the gender dimension in the allocation of resources within a household is an important component of this relationship between remittances and food security. The traditional economic literature largely neglects gender dimensions of remittances expenditure behaviours (Holst, et al, 2011; Nimi & Reilly, 2011). How gender roles and identities shape household access to food and nutrition services should also be taken into consideration in mapping the impact of remittances on household's food security.

Fourth, migration and remittances may have a positive impact on the welfare of households left behind by increasing incomes, financing education and healthcare, improving food provision, and increasing savings and investment. However, when migration is a high-cost venture and when remittances earned by the migrant worker cannot fully offset migration costs, households might not be able to reap the benefits of migration. Without comprehensively charting out-migration costs, any assessment of the migration–development relationship will be partial. It is therefore extremely important to include the resource backwash variable (the amount of resources migrants use for international migration that flows to the destination region) to examine whether and how remittances received by the household compensate for the loss of assets and resources associated with migration financing.

Fifth, the wider context of the policy landscape is crucial in maximising the benefits and minimising the cost of migrant remittance transfers, an issue that has been incorporated into global development policy. For example, migration is explicitly included in at least five of the Sustainable Development Goals (SDGs) formulated by the United Nations (UN, 2015). The importance of well-managed migration and remittance policies to maximise the potential benefits of remittances by reducing the cost are explicitly articulated in the SDGs. Therefore, understanding the remittance policy landscape is central to maximising the development impact of remittances. Globally there has been much policy debate about different dimensions of migration governance such as the regulation of private recruitment agencies and intermediaries, the regulation of criminal activities and exploitation linked to migrant trafficking, but remittance governance rarely enters into the discussion. More research is necessary to identify effective policies that can improve the development impact of remittances. Taken together, these five reasons provide strong grounds for engaging in research on migration, remittances, and food security.

1.3 Objectives and Research Questions

This dissertation project seeks to investigate the reciprocal relationship between migration and food security. It has four broad objectives.

- (i) To investigate household migration financing strategies.
- (ii) To assess the role of socioeconomic variables in shaping household food security conditions and to compare the food security conditions of remittance and non-remittance receiving households.
- (iii) To assess the influence of remittances on household food and nutritional security.

- (iv) To explore effective policies that can maximise the productive utilisation of remittances, and reduce remittance related costs.

Given these four broad objectives, the dissertation attempts to address the following:

I. The impact of migrant remittances on household food and nutritional security

- (i) How are food security conditions different in remittance and non-remittance receiving households?
- (ii) How do migrant remittances influence household food and nutritional security?

II. Quantitative analysis of migrant remittances and household food security

- (i) What effect do migrant remittances have on household per capita food consumption expenditure, access to food, dietary diversity, and household food-related coping strategies?
- (ii) What are the important socioeconomic variables that influence migrant and non-migrant household food security?
- (iii) How does household location influence food security?
- (iv) Does the composition of the remittance receiving household (whether male or female-headed) influence food and nutritional outcomes?

III. Migration finance

- (i) How is migration financed?
- (ii) Is migration a debt induced process in Bangladesh, and if so do migrants' families eventually reap a net gain, or does migration become a 'trapping process'?

IV. Policy Landscape

- (i) How does remittance governance influence the benefits migrant remittances can provide?
- (ii) What are the limitations of existing remittance policies? Which policies are most effective in maximising the benefits and minimising the costs of migrant remittances?

1.4 The Contribution of this Research

The literature on migrant remittances has burgeoned, but there is relatively little information on whether migration is a debt-induced process and how migration and remittances influence households' food and nutritional security outcomes. This dissertation is an effort to broaden our understanding of migration and food security and in the process makes the following contributions.

First, migration finance and the reverse flow of household resources related to migration have been neglected in migration and remittance research. If migration related resource transfer is conceptualised only as one-way traffic through remittances, it will largely produce an inaccurate understanding of the costs and benefits of international migration. Departing from traditional remittance research, this dissertation contextualises contract based migration through migration costs and financing strategies to comprehensively chart income gains and losses.

Second, the study of remittances at the household level is constrained by the paucity of data for most remittance-receiving countries. Existing studies predominantly use remittance data from the Balance of Payment Statistics published by International Monetary Fund (IMF). However, this data only captures monetary flows that move through official channels, missing a substantial portion transferred through informal channels (Adams & Page, 2005; Ratha, 2009; Ratha et al. 2010). Moreover, in-kind transfers and other resources are not reported in the official statistics. Since unrecorded remittances are likely to represent a substantial portion of total international remittances, it is argued that official data severely underestimates the magnitude of remittance transfers. Micro level survey data offers a viable option to map out the impact of remittances at the household level. This research employs such an approach in Bangladesh in order to understand the links between migration, remittances, and food security. Using empirical survey data and

employing well-developed and robust methodological approaches, this research provides new methods and results in the area of migration and food security.

Third, some studies examine migration and food security issues employing purely quantitative approaches that create subsamples of remittance-receiving households from national survey data such as multipurpose, national income and expenditure or living standard survey data. Most of these studies use regression analysis using per-capita food expenditure to assess households' food security, but do not use any scientifically validated food security measurement indicators to capture multidimensional issues such as dietary diversity and coping strategies. Household food security assessments based on household per-capita food consumption expenditure are extremely narrow and do not necessarily reflect the multidimensional aspects of migration and food security. A wide range of issues related to migration and food security, such as the influence of migrants' knowledge on better dietary exposure and choices, the role of land and assets, access to existing food provisions, and diversity in micro and macro nutrients cannot be assessed using only per-capita food consumption data. Moreover, per-capita food consumption expenditure approaches using aggregate food consumption expenditure data treats all the income sources equally. Using this method, it is extremely difficult to dismantle the marginal effects of remittances on food consumption expenditure versus other income sources. This dissertation addresses these methodological problems utilising scientifically validated food security measurement tools with rigorous quantitative models.

Fourth, empirical findings of migration and remittance research are sensitive to methodological approaches. Departing from the traditional approach, this study 'triangulated' different methodological approaches, accommodated primary data with some secondary data and information, and adopted a multidisciplinary conceptual framework to map out the impact of

remittances. Methodological hybridity is central to this research since it combined different conceptual frameworks, data sources, and models.

Fifth, international migration is increasingly becoming circular and temporary. Labour mobility between developing countries and emerging economies — known as ‘South-South’ migration—accounts for about 50% of all documented migration from the Global South and more than 30% of officially recorded remittances (Ratha & Shaw, 2007; Bakewell, 2009). Despite the fact that South-South migration and remittances flows are significant, limited knowledge is available about their consequences, largely due to data paucity. This research focused on the neglected but increasingly significant global economic phenomenon of South-South migration and remittances flows. The outcome of the research also furthers our understanding of the gender dynamics of intra-household resource allocation in the context of migration remittances and food security.

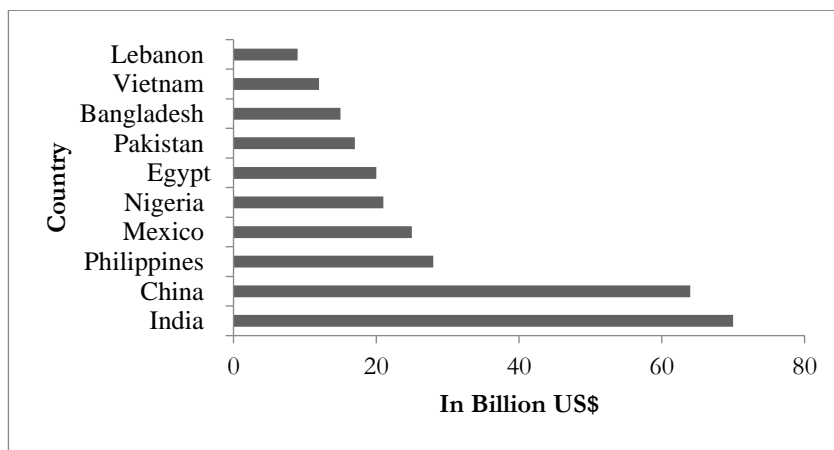
1.5 Research Context: Bangladesh

This dissertation uses household data from Bangladesh to investigate migration and food security linkages. Bangladesh is one of the top ten emigration and remittance receiving countries in the world. Over 8.6 million Bangladeshis are migrants globally, which is 5.5 percent of the total Bangladeshi population (IOM, 2016). Official data indicates that in 2015 Bangladesh received more than 15.2 billion US\$ in remittances (World Bank, 2016). There are some distinct migration and remittance circuits linked to Bangladesh. International remittances come from three different groups of emigrants; American and British diasporas who are well educated and earn a high or middle income, low-income Bangladeshi-origin residents in the USA, UK, and other industrialized countries, and temporary migrants in the Middle East and South-East Asia (Bruyn and Kuddus,

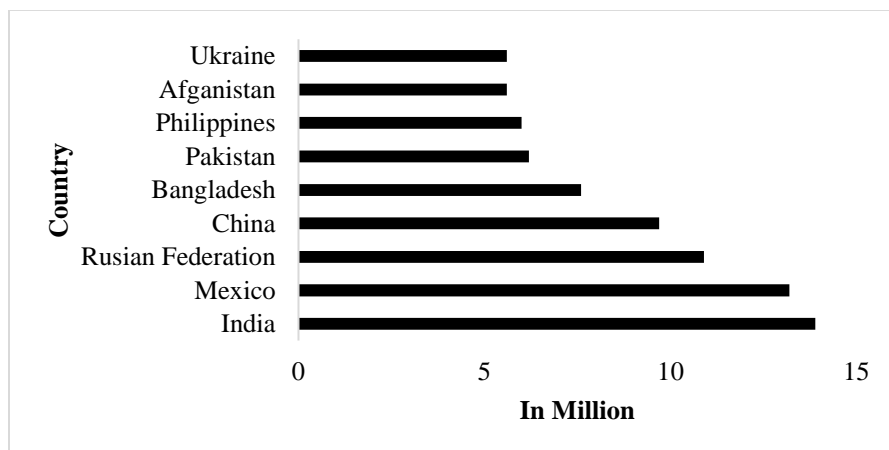
2005). Bangladeshi migrants in Europe, Australia, and North America are predominantly permanent residents comprised of professionals and skilled workers (Buchenau, 2008). In contrast, migration to the Middle East and South-East Asia are primarily for short-term employment characterised by specific job contracts (Bruyn and Kuddus, 2005).

Figure 1-1 Major Remittance Receiving and Emigration Countries of the World

a. World’s major remittance recipient countries (in 2015)



b. Top 10 emigration countries (in 2013)

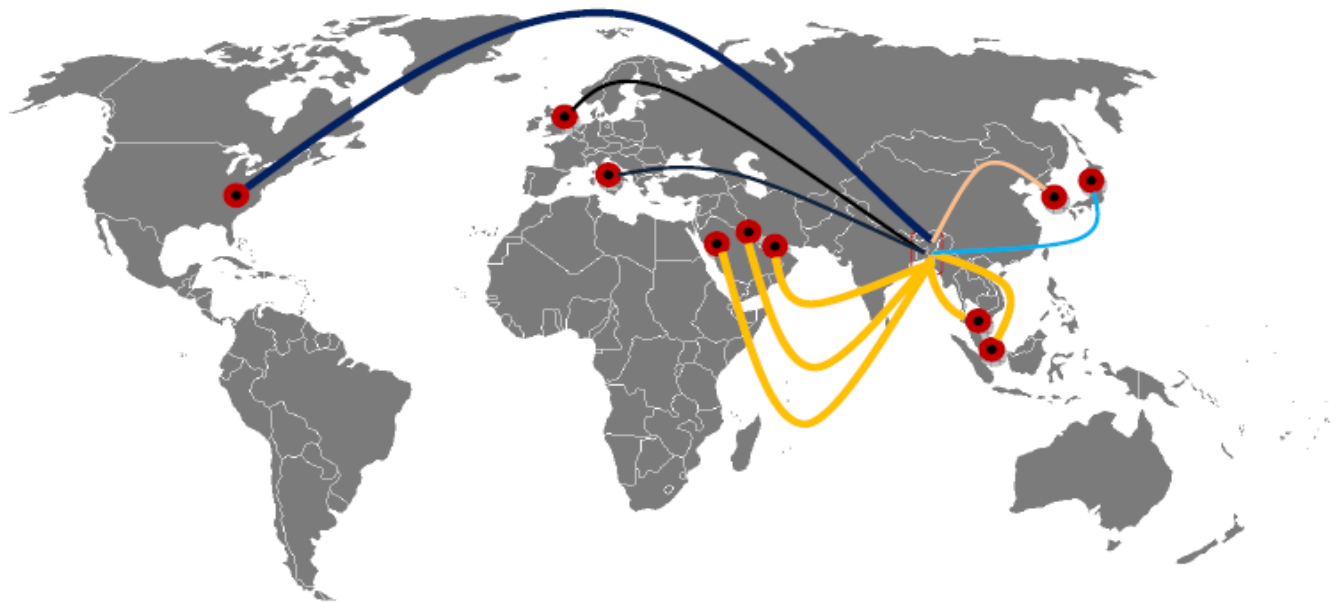


Source: World Bank (2016)

Bangladesh's highest amount of remittances comes from the Gulf Cooperation Council (GCC) countries.¹ Following the rise in oil prices in 1973, a boom in infrastructure development in the GCC countries fuelled the demand for labour migrants. The large presence of migrant populations makes the GCC members among the largest remitting countries. This dissertation is mainly focused on the context of Bangladesh to GCC and South-East Asian migration circuits.

¹ The Gulf Cooperation Council (GCC) countries include Saudi Arabia, Kuwait, Bahrain, Qatar, Oman and the United Arab Emirates.

Figure 1-2 Sources of Remittance Flows to Bangladesh



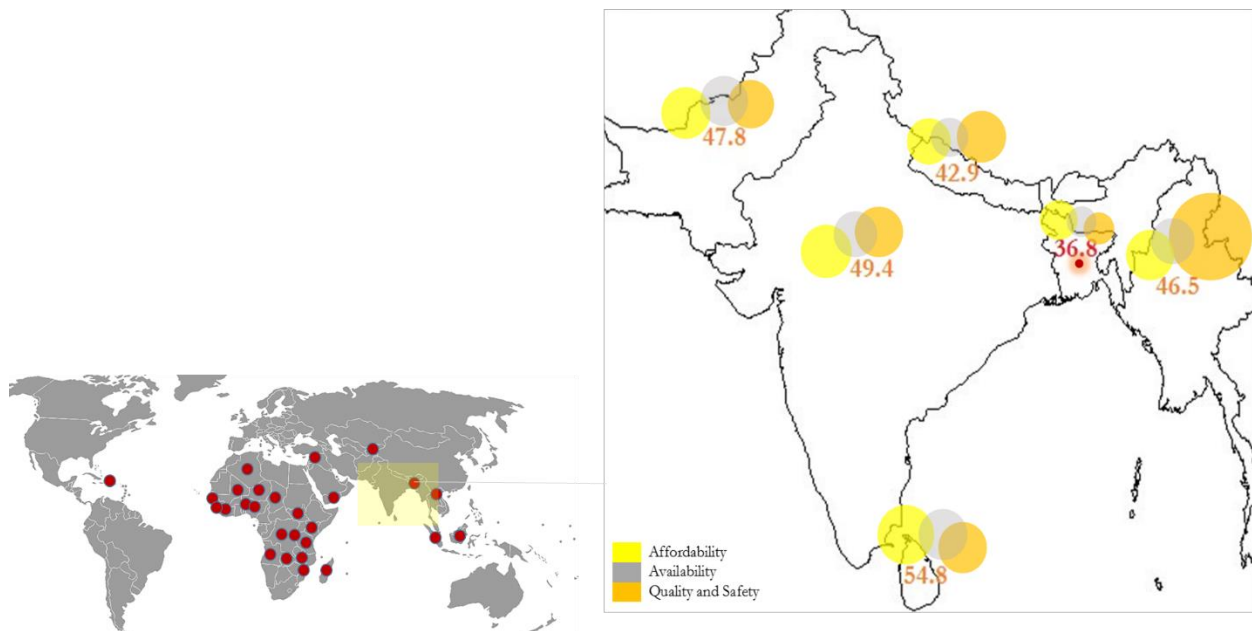
Note: Thickness of the line represents magnitude of remittances

Source: Researcher's own construction based on aggregate remittance data from the World Bank.

Despite the important gains in attaining self-sufficiency in food production and reducing hunger, the food security situation in Bangladesh is still precarious largely due to the widespread economic access problem (Figure 1.3). Nearly half of the population in Bangladesh is food insecure of which one-quarter is severely insecure, and hunger and childhood malnutrition in Bangladesh are among the highest in the world (Saha et al., 2008). More than one-quarter of the population is still living in 'chronic poverty' and lacking access to sufficient food and nutritional services, resulting in more than 23 percent of people consuming less than the 2,122 calories required minimum per day. Moreover, seasonality, price hikes, and food price inflation negatively affect the food security situation in Bangladesh (WFP, 2016). According to World Food Programme (WFP) estimates, around eight million households rely on remittances as their primary income (WFP, 2012).

Bangladesh is therefore an excellent case to investigate migration and food security linkages since it is a mature migration country, a remittance-dependent economy, boasts a large number of migrants and is one of the more food insecure low income earning countries in South Asia. In Bangladesh, migration is widely recognised as coping mechanism and livelihood strategy used to break the cycle of intergenerational poverty transmission.

Figure 1-3 Global Food Security Index of South Asian Countries



Note: Red bubble in the world map indicates the countries with score between 24.0 to 41.5 (in 0-100 scale where 100=most favourable).

Source: Data for this map is taken from Global Food Security Index of the Economist Intelligence Unit (Retrieved from <http://foodsecurityindex.eiu.com/Downloads> on 27 July, 2016).

1.6 Dissertation Outline

Following this introductory chapter, chapter two critically reviews the existing theoretical and empirical literature. Chapter three examines the impact of remittances on households' food and nutritional security, dietary diversity and household coping strategies. Chapter four assesses the

impact of migrants' remittances on household food security utilizing robust econometric tools. Chapter five focuses on geographies of debt-financed migration, migration channels, migration related costs, the role of land and debt in the migration system, and household resource backwash or costs related to different stages of migration. Chapter six analyses the remittance policy landscape in Bangladesh and Chapter seven concludes. Each of the results chapters consists of an introduction, methodological approach, key findings, policy recommendations, limitations of the approaches used, and recommendations for further research.

1.7 How Different Parts of the Dissertation are Interlinked.

This dissertation took a holistic approach to investigate the links between migration and food security, as well as migration related debt and remittance policy. It adopted multi-method approach using a multiscalar framework to investigate remittances, food security and migration financing. Four interdisciplinary research finding chapters in this dissertation are self-contained and interlinked. At a micro level, it assessed the impact of remittances on household food security, at meso level it explored debt financed migration strategies, and at the macro level it shed light on the remittance policy landscape in Bangladesh. All these factors are key dimensions of the migration and development debate.

The primary focus of the dissertation was to investigate whether and how remittances improve household food security conditions. For comprehensive charting of the welfare impact of remittances at household level it was also important to investigate migration related reverse resource flows, termed 'resource backwash', since this phenomenon can undermine the positive impact of remittances, especially in food provisioning. The reason behind this is that although migration has become an essential livelihood strategy for households, they deplete significant resources in terms of land and other pecuniary assets in order to gain access to migration

opportunities. Circular migration often entails significant resource outflows from households and this process might, in turn, diminish migrant household resources, assets, and capacity that can impede subsequent economic wellbeing and more structural food security conditions. Without incorporating the full costs, any assessment of the development impact of migration would be inaccurate. Therefore, the dissertation also investigated migration financing, the role of debt and assets in funding the migration system.

Finally, this dissertation investigated the remittance related policy landscape at the macro national and international policy level. The reason is one way to enhance the development potential of migration is to improve macro level governance of remittances so that costs are reduced, and funds are transferred more effectively into development capital. Although the disciplinary and methodological rubrics approaches used vary between chapters, the research findings are interlinked and related to the broader migration and development debate.

Chapter 2 Literature Review: Remittance and Food Security Variables in Migration and Development Research

2.1 Introduction

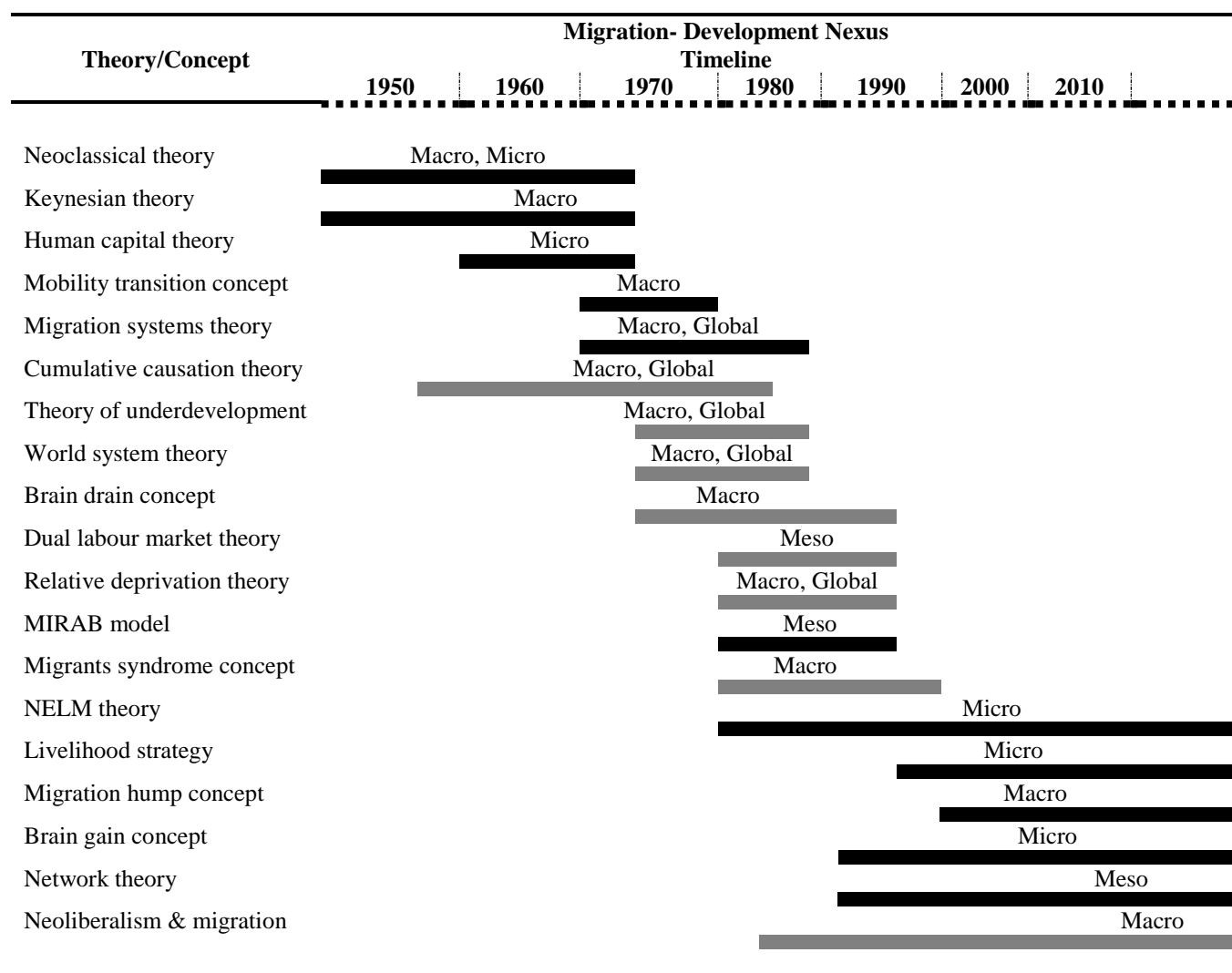
The relationship between migration and development is a century-long debate. However, during the last six decades, the debate has inspired burgeoning research. Despite the boom in migration and development research, the relationship between the two has been described as ‘unsettled’ (Papademetriou & Martin, 1991), ‘unresolved’ (Appleyard, 1992; Ellerman, 2005) and suffering from lack of adequate ‘empirical evidence’ (Newland, 2007). The links between migration and development have been viewed from both ‘optimistic’ and ‘pessimistic’ perspectives in the theoretical and empirical literature. De Haas (2010, 2012) interpreted three distinct waves of debate on the migration-development relationship using the metaphor of a ‘pendulum’ swinging from ‘optimistic’ from the 1950 to 1960s, to sceptical and pessimistic in the 1970s to late 1980s and back again to optimistic in the late 1990s and 2000s.

2.2 Emergence of the Migration and Development Debate

It is often argued that migrant pecuniary transfers, such as financial remittances, and ‘non-pecuniary’ transfers such as knowledge, skills, and entrepreneurial skills, or ‘social remittances’ (Levitt, 1998; 2001) are contributing factors to the recent positive turn of the migration-development debate. However, it is also important to have a systematic assessment of whether and how different variables shape the migration-development debate and how remittances are assessed within the debate. The objective of this chapter is to examine (i) the key variables in theoretical and empirical literature that have shaped the migration and development debate during the last six decades (ii) the parallels and discrepancies in different theories, (iii) whether, how and

to what extent remittances have been assessed within the debate and (iv) explore gaps in the literature and potential areas for future research.

Figure 2-1 Time Line of the Emergence of Migration and Development Debate



Source: Author's construction based on a review of theoretical and empirical literature related to migration and development.

Note: Dark shade represents optimistic views of migration-development relationship while light shade represents pessimistic views

2.2.1 Dominant Migration Theories Prior to 1970: Synergy of Macro and Micro Variables

One of the earliest and most influential theoretical migration frameworks is E.G. Ravenstein's laws of migration in the 19th century (Ravenstein, 1885, 1889; Lee 1966). This is one of the first theories that used macro level variables and empirical census data to develop a systematic explanation of migration. The theory suggests that migration is closely linked with push factors such as low wages, high unemployment rates as well as pull factors such as high wages and low unemployment. Subsequently, neo-classical migration theory assumes that migration is driven by spatial differences in labour supply and demand and differences in wages between labour-rich and capital-rich countries, and migration is part of an equalization process moving toward the optimal spatial allocation of production factors. Similarly, Keynesian theory also highlights migration as an equilibrium recovering process (Hart, 1975; Jennisen, 2003; Rapoport & Docquier, 2006). Keynesian theory argues that as household consumption and investment aggregate to the national level, migrants' remittances should have a multiplier impact on the economy (Rapoport & Docquier, 2006). In contrast, neo-classical theory explains the migration process strictly with respect to economic mechanisms, such as factor mobility, wage differentials, and utility maximization. The benefits of the migration process in the sending countries and remittances are typically ignored in neoclassical theory (de Haas, 2012; Taylor, 1999).

While the neo-classical model considers migration as an 'equilibrium recovering' process, the 'human capital theory of migration' (Bauer & Zimmermann, 1999; Sjaadstad, 1962; Todaro, 1969) recognizes migration as voluntary and an individual investment decision. The human capital theory assumes that migrants consider expected net return, opportunities and outcomes of future higher education and work experiences in migration decision-making and thus overlooks the broader

social and development context of the migration process (Bauer & Zimmermann, 1999; Sjaadstad, 1962; Todaro, 1969).

Departing from the individual and micro level motives of migration, some theories, for instance ‘mobility transition’ (Zelinsky, 1971) and ‘migration systems theory’ (Mabogunje, 1970) do consider the broader development context in the migration process. ‘Mobility transition theory’ links migration progression with broader development transitions such as ‘state formation,’ ‘modernization,’ ‘demographic transition’ as well as the level of economic growth (Bauder, 2001; Skeldon, 1990, 2012). ‘Migration systems theory’ perceives the migration process operating as a system which links a set of places and flow of people, goods and services that facilitate further migration (Kritz & Zlotnik, 1992; Vertovec, 1999). Considering the ‘spatial’ and ‘time’ dimensions of the migration system, the theory argues that migrant transfers influence the entire development process. However, the assumptions of the mobility transition can be criticized as the migration process is not always linked with stages of development and might not be a time-bound process. The theory postulates a reciprocal relationship between migration and development and the way in which migration influences the economic as well as social, cultural, and institutional conditions in both the sending and receiving countries. It does not, however, explain how migration systems change over time.

2.2.2 Migration research in the 1970s and 1980s: Global Macro Variables

The second wave of debate, which is principally sceptical about the development implications of migration, was triggered by the ‘theory of underdevelopment’ (Frank, 1966,1967), ‘cumulative causation theory’ (Kaldor, 1970; Massey & Zenteno, 1999; Myrdal, 1957), ‘world system theory’

(Wallerstein, 1974, 1983), ‘dual labour market theory’ (Poirone, 1983) and the ‘brain drain concept’ (Adams, 1969; Baldwin, 1970).

Migration and development debates in the 1970s and 1980s were largely influenced by the ‘Theory of Underdevelopment’ (Frank, 1966,1967), which views the global capitalist system as one of the root causes for the ‘development of underdevelopment.’² The theory of underdevelopment views underdevelopment in the peripheries as a result of the structure of colonial and neocolonial economic relationships between the developed capitalist economies in the core and their underdeveloped peripheries. The theory asserts that underdeveloped countries in the peripheries are ‘feeding the capitalist need’ of the core or developed countries. According to this theory, migration is a response to spatially uneven development, and existing imbalances and social processes reinforce the migration process (de Haas, 2012).

‘Cumulative causation’ theory is also focused on global macro level analysis and explains that the migration process is driven by ‘uneven development’ and inter-regional disparities in welfare. Once the flow begins, it continues to grow, sustaining itself by creating more migration. Although the process helps the migrants’ receiving countries by providing cheap labour, it intensifies underdevelopment in migrant-sending countries. Most of the literature concerned with cumulative causation is focused on the Mexico-USA migration cases (Massey & Zenteno 1999; Stark & Taylor, 1989). The theory acknowledges that cumulative causation leads to uneven development. Although it cannot continue indefinitely, the theory does not explain whether changing the level of development might cause the process to cease.

² ‘Theory of Underdevelopment’ does not accommodate the internal factors in the peripheries to define underdevelopment rather it refers to a situation in which resources are being actively used for the benefits of the developed countries at the core. This theory also asserts that underdevelopment in the peripheries is a result of developed rich countries exercise of dominance and ‘imperialist assertion’.

Similarly, the 'world systems theory' also focuses on global macro variables (Portes & Walton, 1981; Sassen, 1988; Skeldon, 1997; Wallerstein, 1974, 1983) and posits that the migration process is a 'function of globalization' and that the process is an outcome of the 'disruption and dislocation' of capitalist development. The theory overemphasises world market forces and views the migration process as a natural consequence of globalisation. At the same time, the 'brain drain' concept fuelled negative impressions of the migration-development nexus by focusing on the negative consequences of the flight of skilled workers from developing countries with scarce human capital. However, the analysis of brain drain tended to overlook the development potential of remittances and knowledge transfer in migrants' home countries.

Rather than concentrating on skilled labour, the 'dual labour market' theory examines a 'segmented', dual pattern of occupation structure in labour markets in migrant receiving countries (Bauder, 2001; Berger & Piore, 1980; Bulow & Summers, 1986; Piore, 1983). While the theory ignores the migrants' skill endowment, it argues that migration is driven by the demand for low-skilled workers in industrialized countries. The analysis is biased toward demand-side factors and ignores supply side dynamics in the migration process.

In contrast, the 'relative deprivation theory' focuses on micro and meso level variables and does emphasize the supply side of the migration process (Bhandari, 2004; Quinn, 2006; Stark and Taylor, 1989; Stark & Taylor, 1991). The theory asserts that absolute income differences, inequality and the welfare disparities of the sending side influence the migration decisions of households and that individuals from more deprived households are more likely to migrate. Focusing on macro level analysis, the 'migration syndrome' concept (Reichert, 1981; Taylor, 1999) considers migration as a 'vicious circle.' The entire process is seen as an outcome of underdevelopment that undermines development, but in the process, the potential benefits of the

migration process are overlooked in the analysis. The migration syndrome concept states that remittance transfers lead to the receiving countries' overdependence on developed countries.

2.2.3 Dominance of Micro Variables in the 1990s

Theoretical and empirical literature that emerged in the late 1980s and 1990s was, in general, more positive about the development consequences of migration, particularly with respect to the role of remittances, and the transfer of skills and knowledge across borders. The focus of the debate during this period turned toward micro level analysis.

“The New Economics of Labour Migration” (NELM) (Stark & Bloom, 1985; Stark & Taylor, 1989; Stark, 1991; Taylor, 1999) is the most influential theory shifting the migration-development debate toward the optimistic. NELM explicitly links remittances into its analysis of the causes and consequences of migration. The NELM framework explains migration and remittance behaviour as a strategy that mitigates production constraints in imperfect market environments. This creates economic opportunities, securing and smoothing the recipients' consumption, and providing a hedge against income shocks for households, rather than just for individuals (Schrieder & Knerr, 2000). One of the limitations of NELM theory is that it is exclusively sending side biased. The NELM overemphasizes households as the unit of analysis by neglecting broader development space.

The broader development space is accommodated in the idea that migration is a ‘transnational livelihood strategy’ (Gardner, 1995, McDowell & de Haan, 1997; Carney, 1998; de Haan, 2000; de Haan & Zommers, 2005). Migrants link their country of origin and their country of settlement by building a transnational space, referred to as a ‘transnational social field’ (Schiller et al., 1992), ‘transnational migrant circuit’ (Rouse, 1991), ‘transnational community’ (Georges,

1990), ‘transnational social space’ (Pries, 2001) and as ‘translocalities’ (Goldring, 1998; Smith, 1998). This array of literature asserts that the flow of migrants’ economic and noneconomic resources shapes development unevenly across multiple geographical scales (Guarnizo, 2003; Zapata, 2011). They suggest that the household sends workers abroad to increase economic opportunities and income relative to other households and to reduce the risk of insufficient household income. Migrants influence development in their home countries by maintaining long distance economic and non-economic connections (Schiller & Blanc-Szanton, 1992; Guarnizo, 2003).

In a similar fashion, the ‘brain gain concept’ (Beine et al., 2001, 2008, Elmenstein & Stark 1998; Mountford, 1997, Stark 2003, Schiff, 2005; Vidal, 1998) assumes migrants increase the expected returns to poor countries through the transfer of skills, knowledge and social capital that are positive for development. However, this concept overemphasizes the ‘return migration’ process by focusing less on the migration process and its determinants.

In a broader perspective, ‘network theory’ (Dustmann & Glitz, 2005; Fawcett, 1989; Vertovec, 2002) suggests that networks reduce the cost of migration and risk, yet increase the expected return from migration. Some less influential models and fragmentary theories such as the ‘Migration, Remittances, Aid and Bureaucracy (MIRAB) model’ (Bertram & Watters, 1985, Bertram, 1999; Frankel, 2006) and the ‘Migration Hump’ concept (Martin, 1993; Martin & Taylor, 1996) developed following the optimistic debate on migration and development. The MIRAB model identifies migrants’ networks as ‘Kin Corporations’ that promote large-scale emigration from small economies. The model acknowledges that remittances are key development resources that support families and provide capital-scarce countries with development finance. The ‘migration hump’ concept argues that a certain threshold of wealth is necessary to finance the costs

and risks of migration. Therefore, more development leads to increased migration. The analysis in these models is narrowly focused on the more matured and sustaining migration phases, and may be strongly context specific.

Some of the more recent literature post-1990 remains sceptical about potential links between migration and development. Focused on macro-level variables this work posits that the migration process is an outcome of dislocation and underdevelopment due to neo-liberalism in migrant sending countries (Burgess, 2009; Canterbury, 2012; Delgado Wise & Márquez, 2009, 2012; Gamlen, 2014; Lawson 1999; Popke & Torres, 2013). The main argument is that underdevelopment, declining living standards, poverty and inequality due to neoliberal reform in the peripheral nations are increasingly driving the migration process. Although migrants contribute to the development of migrant-receiving countries providing cheap labour, they continue to be socially and economically exploited (Delgado Wise & Márquez, 2009, 2012). Although the literature recognises remittances, their importance in the receiving countries' economy is largely ignored in the analysis of these neo-underdevelopment theorists, who undermine the value of remittance flows by using the argument that they create dependency in the receiving countries upon the core countries. The main tenets of this array of literature are not significantly different from the old 1970s pessimistic views about the link between migration and development.

Theoretical debates on the relationship between migration and development exploded in the 2000s. Most research is focused on the economic determinants and consequences of remittances at macro and micro levels. Eventually, the focus shifted to other development aspects such as the transfer of skills and knowledge across borders, the impact of remittances on education, healthcare, and housing. This wave of empirical research has been facilitated by the development of more advanced applied statistical and econometric modelling techniques and the availability of

large-scale survey data, which enabled researchers to assess the consequences of migration and remittances at the household level. Due to the lack of a unifying theory, the use of multiple theoretical bases, diverse methodological approaches, and datasets from different geographical contexts, the results as a whole tend to be inconclusive and often contradictory.

2.3 Evaluation of the Migration-Development debate and the Role of Remittances

The preceding sections provide an account of the theoretical and empirical grounding of the migration and development debate. Also examined are the parallels and discrepancies in different theories, and empirical research linking migration and development (see table 2.1 for details). A review of the literature reveals at least five broader trends, consensuses, and controversies which are summarized below.

One, the mosaic of theoretical literature shows that the relationship between migration and development is “complex,” “multidimensional,” “interrelated,” “place specific” and often “reciprocal in nature” thus influencing each other (Arango, 2000; Crush & Frayne, 2007; de Haas 2005, 2012). Development affects international migration and international migration influences development. The research literature has investigated three broad areas; continuation of migration; the socioeconomic impact of migration in the host countries and the socioeconomic consequences of migration in the sending countries. The development impact of migration is uneven and heterogeneous, and there is no universally accepted principle or paradigm in studies of the migration-development debate.

Two, most of the theoretical literature focuses on seven types of variables (i) the demand side of migration (ii) supply side factors (iv) the individual as the unit of analysis (iv) family as the centre of the analysis (v) global market forces (vi) local push factors and (viii) policy variables

including structural economic relations. It is often argued that theories related to migration and development did not emerge in a cumulative sequence of contributions building upon previous theories (Arango, 2000). Most of the earlier migration theories overemphasised the determinants and the process of migration and ignored the ‘heterogeneous’ impact of migration as well as the impact of migrants' remittances in the remittance-dependent countries. Some earlier theories, such as the ‘world systems theory’, integrated the issue of the transfer of goods and services in an abstracted form into their analysis. However, the explicit analysis of remittances was largely missing in the earlier theories.

Three, the links between migration and development have been theorised from both ‘optimistic’ and ‘pessimistic’ perspectives in the literature, and this has vacillated over the last century from positive to negative and back to positive (de Haas, 2012). A surge in remittances after 2000 compared to other capital flows, such as official aid (ODA) and foreign direct investment (FDI), coupled with an increased focus on the involvement of the diaspora in development has shaped the most recent positive assessment in the migration-development debate. However, an array of more recent literature is reasserting the more sceptical perspective in the ‘new migration-and-development pessimism’ (Gamlen, 2014). However, their argument does not seem to be significantly different from the theories that triggered the pessimist views in the 1970s and 1980s regarding migration and development links.

Four, NELM has explicitly included remittances in its analysis; bringing a new perspective to light by explaining how households take the migration decision in order to diversify income and counterbalance market failures in the home country. It has become an influential theoretical framework for migration research.

Five, theoretical developments have been accompanied by increased empirical research, which has in part been facilitated by the development of more advanced statistical techniques for assessing the influence of remittances. However, findings are largely inconclusive due to the heterogeneity of techniques, datasets, and geographical contexts. There is a general consensus that remittances reduce poverty, improve health and sanitation, improve housing, help to develop financial markets, and protect households from consumption instability during the crisis, all of which do support a positive view of the migration- development relationship.

Therefore, while it is clear that migration can be seen as an indicator of underdevelopment, it is increasingly viewed as a factor that can potentially support development. Remittances are an important variable to consider due to their sheer magnitude, scale, and the ramifications of their circulation for recipient countries.

2.4. Remittances: A Major Link between Migration and Development

This section attempts to critically evaluate, interpret the similarities, and contrasts of the empirical literature on migration and development in order to identify gaps in the literature that will inform future work. Researchers have investigated the impact of remittances on multifaceted areas including their positive impact on poverty reduction (Adams & Page, 2005; Adams, 2011; Akobeng, 2015; Acosta et al., 2008; Lokshin et al., 2010), education, health care and better housing provisions (Edwards & Ureta, 2003; Yang, 2008a), impact on inequality (Adams, 1989; Koechlin & León 2007) and their impact on income smoothing in vulnerability and income shocks (Jones, 1998; Kapur, 2003). Research has also investigated the role of remittances in facilitating access to the formal financial sector services, their role in promoting the financial inclusion of the marginalised and their influence on financial development (Anzoategui et al., 2014; Gupta,

Pattillo, & Wagh, 2009). There is also some evidence that cash remittances can assist credit-constrained entrepreneurs in inefficient and fragile credit markets (Woodruff & Zenteno, 2001; Giuliano & Ruiz-Arranz, 2009). Conversely, another body of literature argues that remittances may be harmful to the receiving countries as a result of ‘Dutch disease effects’³ and the ‘moral hazard problem’ (Chami et al, 2003; Acosta et al., 2009). As non-market private transfers, cash remittances may reduce the recipient’s labour market and civic participation (Acosta et al., 2009; Chami, Connel & Samir, 2003).

Chami et al. (2003) triggered the debate by demonstrating a negative correlation between the growth rate of remittances and of per capita Gross Domestic Product (GDP) using panel data from 113 developing countries. Criticising Chami et al.’s (2003) findings and methodological approach Natalia et al. (2009) argue that negative results have emerged in cases of the remittances-growth link because of ‘omitted variable bias.’ The authors use cross-sectional and panel data from 162 countries gathered over 34 years to show that remittances exert a significant positive impact on macroeconomic growth if the remittance receiving countries’ policies and institutions create the incentives to promote a congenial atmosphere for investment. The International Country Risk Guide (ICRG) aggregate index, as well as a number of its components, and the Corruption Perception Index (CPI) of Transparency International are used as proxies for institutions. Using 24 years of data from five Mediterranean countries Glytsos (2001) also shows remittances are capable of boosting growth and moderating recessions noting that even consumption of remittances may be productive through its diffused effects on the economy. However, one of the potential limitations of these macro studies is the aggregate official remittances data, which

3 The main argument behind the ‘Dutch disease’ problem is that it causes the relative prices of non-tradables (such as housing) to rise compare to tradable and thus tradable production becomes less profitable. Higher prices of non-tradables serve as incentives for the expansion of the sector. After receiving remittances, the households exchange remittances in local currency which may appreciate local currency and crowd-out export.

typically is underestimated and unreliable, and accordingly the reliability and validity of findings can be criticised.

While the relationship between remittances and economic growth is inconclusive and contested, research on the impact of remittances on small businesses creation and capital formation are broadly favourable. Woodruff and Zenteno (2007) show a positive impact of remittances on the level of capital investment in microenterprises, using a database of 6,000 micro enterprises from Mexico. In the context of the same country, using household survey data from 30 different communities, Massey and Parrado (1998) find a positive impact of remittances on business creation. Amuedo-Dorantes et al. (2006) confirmed these results in the Dominican Republic. The broad conclusion of these studies is that remittances facilitate investment by relaxing credit constraints. It is helpful to note that one of the robust dimensions of these studies is that they all use large-scale survey data.

2.4.1 Remittances, Poverty, and Inequality

The impact of remittances on poverty reduction has been extensively investigated. Given some national variability, there is a general consensus among researchers that as remittances are included in household income the number of people living below the poverty line falls to between 3 to 5 percent (Adams, 2011). Adams and Page's (2005) influential study examines the impact of international migration and remittances on poverty in developing countries using data from 71 developing countries. The study shows that both international migration and remittances significantly help to reduce poverty. The methodological challenge of this research is the likelihood that international migration and remittances may reduce poverty in the developing

world, but poverty may also determine the level of migration and remittances.⁴ Thus, Adams and Page (2005) employ a two stage, least-square technique to control for ‘reverse causality’ and show that a 10 percent increase in per capita official international remittance leads to a 3.5% decline in the percentage of people living in poverty (less than \$US 1.00 per person per day). Using data from ten Latin American countries, Acosta et al., (2008) show poverty headcount falls by 0.4 percent for every 1 percent point increase in remittances to GDP. Using representative national survey data, other studies such as: Gupta, Pattilio & Smita (2009) from Sub-Saharan Africa; Raihan et al., (2009) from Bangladesh; Lokshin et al. (2010) from Nepal; Taylor et al. (2005) from Mexico; and Gyimah-Brempong and Asiedu (2011) from Ghana all describe the poverty-reducing effect of remittances.

While there is a general consensus on the poverty-reducing effect of remittances, the impact of remittances on income inequality remains a contradictory and debated issue (Adams, 1989; Koechlin & León 2007). Using survey data, Rodriguez (1998) in the Philippines and Adams and Cuecuecha (2010) in Indonesia show that the Gini coefficient of inequality increases when remittances are included in household income. These findings (Adams & Cuecuecha, 2010; Rodrigue, 1998) are challenged by some other studies, for example, McKenzie and Rapoport (2007) and Jones (1998). With the advantage of using historical, state-level survey data and a two

⁴ ‘Endogeneity’ is one of the complications of quantitative research concerning migration and remittances. A regression model suffers from the ‘endogeneity’ problem if there is a correlation between the variable and the error term. Among many reasons, ‘simultaneity,’ ‘omitted variables,’ and ‘reverse causation’ are some of the common reasons behind endogeneity (Wooldridge, 2009; Adams, 2011)). Thus, if the endogeneity problem is not tested and controlled appropriately, it cannot be confirmed that the findings are capturing the real influence. The ‘endogeneity’ problem was ignored in most of the earlier economic studies on remittances. However, some recent studies have addressed the problem, largely using instrumental variable (IV) techniques that treat the method as most convenient and suitable solution to the problem.

state least square approach, McKenzie and Rapoport (2007) show migration initially increases inequality. However, migration and remittances reduce income inequality when the community reaches a mature migration stage. Some other studies show income inequality reduces the effect of remittances. For example, Adams (1992) uses survey data from Pakistan, while Taylor et al. (2005) and Taylor and Wyatt (1996) use data from Mexico. The argument behind these studies is that remittances cause spill-over effects on other, non-remittance receiving households. It may be concluded, therefore, that in the long run migration reduces income inequality.

2.4.2 Remittances, Education, and Healthcare

Numerous studies argue that households consume remittances efficiently for education, health care, and housing (Adams & Cuecuecha, 2011; Edwards & Ureta, 2003; Yang, 2008b). However, the impact of remittances on health care and education in developing countries is mixed. On one hand, most studies find that international migration and remittances help households achieve better access to healthcare and education services (Edwards & Ureta, 2003; Duryea et al. 2005; Hildebrandt & McKenzie, 2005; McKenzie & Rapoport, 2006). Using census data from Mexico, Duryea et al. (2005) find remittances reduce infant mortality by improving housing conditions. Hildebrandt and McKenzie's (2005) findings support these results using nationally representative, historic, state-level data from Mexico. In other studies, Adams and Cuecuecha (2010) in Guatemala; Bredl (2011) in Haiti; Yang (2008b) in the Philippines; and Kandel and Kao (2011) and McKenzie and Rapoport (2006) in Mexico, find that remittance income has a significant positive effect on school retention rates.

Osili (2004) investigates migrants' housing investment choices and argues it is significant because housing is a stepping stone for migrants' broader investment relationships with their home

countries. Using a matched dataset from both migrants' origins and the destination countries Osili (2004) showed that age and income profiles have a significant impact on the migrant's respective level of housing investment. Using household survey data from Pakistan Adams (1998) also found evidence of remittances role in forming housing investment.

2.4.3 Migration, Remittances, and Food Security

Migration and food security links have, until recently, been relatively under-explored. As a result, remittances help to secure and smooth the recipients' consumption and provide a hedge against income shocks (Schrieder & Knerr, 2000).

Some more recent empirical studies investigate the impact of migration and remittances on households' food and nutritional security. Based on their focus and methodological approaches these can be grouped into three categories. The first category follows purely quantitative approaches and uses secondary aggregate national data as well as multi-topic household survey data to investigate linkages between migration and food security (Babatunde and Martinetti, 2010; Combes and Ebeke, 2011; de Brauw, 2011; Jimenez, 2009; Karamba et al. 2011; Nguyen and Winter, 2011; Zahonogo, 2011; Quinn, 2009; Combes, et al. 2012; Taylor et al. 2003). The second category of studies uses both qualitative and quantitative approaches to explore different dimensions of migration and food security (Crush, 2013; Gray, 2009; Jokisch, 2002). The third category of studies uses a qualitative approach to investigate the impact of migration and remittances on agricultural intensification, landscape-related practices, and migrants' social capital in creating agricultural businesses (Davis and Lopez- Carr, 2014; Taylor et al., 2004). I explore each of these categories in turn in more detail below.

Combes and Ebeke (2011) investigated remittances and household consumption instability using panel data from 89 countries over the period 1975–2004. The study shows migrants' remittances significantly reduce households' 'consumption instability' by dampening the effect of sources of instability driven by natural disaster and agricultural shocks. However, the study uses aggregate remittance data, which includes households' final consumption expenditures on all goods and services, including durable products. Therefore, it is challenging to explore how remittances might reduce the households' food-related consumption instability using the existing aggregate consumption data. In another study, Combes et al. (2012) contribute to developing a model that incorporates the food price crisis variable in their analysis while exploring the role of foreign aid and remittance inflows in mitigating the effects of food price shocks. The authors classify a panel of 91 countries into highly vulnerable and less vulnerable countries based on the vulnerability index and criteria.⁵ Combes et al. (2012) argue that when countries exhibit a high degree of vulnerability, remittances, and foreign aid inflows have a strong dampening effect on the impact of food price shocks on household consumption.

Departing from the macro-level analysis, Babatunde and Martinetti (2010) use household survey data from Nigeria and find a positive link between migration and food security. The authors show that total income, household assets, and food consumption are higher in remittance-receiving households compared to non-receiving households. Using a similar methodological approach, Nguyen and Winters (2011) also obtain a strong positive relationship between remittances and food security. Using nationally representative multipurpose panel data from the household living

⁵ Combes et al. (2012) prepared the vulnerability index combining three variables such as (i) the ratio of food imports to total household consumption (ii) the ratio of total food imports to total imports of goods and services; and (iii) the inverse of the level of GDP per capita.

standards survey in Vietnam, they show that migration has a positive effect on overall per capita food expenditures, per capita calorie consumption, and food diversity.

Karamba et al. (2011) use living standard survey data from Ghana and show migration does not substantially affect total household food consumption. On the contrary, the findings indicate that migration appears to increase overall food consumption expenditures for less nutritious categories of food such as sugar and beverages in high migration prone regions. These studies use large-scale, multipurpose living standard measurement surveys and the components of food consumption and expenditure to measure the food security dimension of households. However, the per-capita food expenditure approach does not reflect the multidimensional aspects of households' food security, such as dietary diversity, food access problems, and food-related coping strategies. Jimenez (2009) uses interview data from 49 remittance receiving and 30 non-receiving households for the analysis of food consumption patterns. His estimate indicates that consumption patterns between households do not differ significantly. Remittance-receiving households tend to consume less nutritious food and are more dependent on more industrialized and ready-to-eat food (Jimenez, 2009). However, Jimenez's (2009) smaller sample might not be sufficiently representative to assess the impact of migration and remittances on households' food security.

Unlike using the economic gauge, de Brauw (2011) investigates the correlation between migration and 'anthropometric' (body measurement) outcomes for children in remittance receiving households. Using cross-sectional data from El Salvador, this study shows that remittances provide protection to households against the risk of global food price crisis and also that migrant household who have access to remittances are not affected as negatively as households without such access (de Brauw, 2011). The study shows children in households with access to remittances exhibit lower

declines in height for age Z (HAZ) scores (de Brauw, 2011), compared to the households without access to remittances. Using living standard survey data Azzarri and Zezza (2011) find the same results in the case of Tajikistan.

Generoso (2015) investigates the interaction between rainfall variability, remittances and food security using rural household data from Mali. Using composite food security index and proportional odds logistic model, the study shows remittances help to reduce the transitory food insecurity of the households living in regions with climate-related hazards, such as high rainfall instability. The study also shows that remittances do not influence capital investment in agriculture, and therefore may not have an effect on reducing deep-rooted structural food insecurity problems. Although the study uses more robust estimators and indicators, it uses relatively old and secondary data sources such the Comprehensive Food Security and Vulnerability Analysis (CFSVA), which may not contain a multidimensional aspect of the role of migration and remittances in reducing food insecurity.

Crush (2013) uses a mixed-methods approach to examine migration food security linkages in an African context. This study employs a holistic approach including the influence of remittances on household food security, migrants' own food security in the destination region as well as migrant food transfer (Crush, 2013). The study uses some scientifically validated and more user-friendly indicators such as the Household Food Insecurity Access Scale (HFIAS), Household Food Security Access Prevalence Indicator (HFIPA), and Household Dietary Diversity Score (HDDS), to assess the level of household food security. Using a representative household survey from the Southern African Development Community (SADC), and disaggregated income and expenditure data of the remittance receiving and non-receiving households, this study shows that the vast majority of households purchase food using remittances. Remittances are, therefore, a

critical component of food security. The study also shows that rural households purchase most of their food using remittances rather than by investing in agriculture.

In one of the only South Asian studies, Regmi and Mishra (2016) use a multipurpose national survey dataset, the Bangladesh Integrated Household Survey (BIHS) 2011-2012 conducted by International Food Policy Research Institute (IFPRI), to demonstrate that remittances improve household food security conditions and that agricultural income is also positively correlated with household food security. However, there are at least three shortcomings in this study. First, the study used two food security measurement variables from the BIHS—the Food Consumption Score (FCS) and the Households Hunger Scale (HHS). However, the study ignored some key variables in the model such as household assets, productive agricultural land, farm size, and location-specific environmental factors that may influence household food security conditions in Bangladesh. The model may also suffer from the ‘omitted variable’ bias. Second, this study uses secondary survey data that was collected with an objective to assess the overall food security status of the country and may not capture adequate information on remittance-receiving households. It is not clear from the study whether and how the researcher created subsamples of the remittance receiving households from the BIHS data set, what were the factors and selection criteria of the subsample, and the number of remittances receiving households surveyed compared to non-receiving households. Third, the author regressed food security indicator variables with a number of independent variables such as remittances, income from other sources and other demographic variables, which may lead to an endogeneity problem particularly with reference to income and remittances, which can generate inaccurate estimates. It is not clear from this study whether and how the researcher conducted any diagnostic test or any other robustness test to identify and mitigate the endogeneity problem. If the endogenous variable is not treated

appropriately, interpretation of the results and the inference would be biased and the force of the results undermined.

Caution should be taken in examining the impact of remittances on household food security using multi-purpose secondary survey data for two reasons. First, the objectives of multi-purpose surveys are varied and contain a vast amount of information on wide range of variables, but may lack adequate information on migration, remittances, and food security. Second, the impact of remittances on rural migrant households will be different than the urban ones. Similarly, food security experiences of temporary and circular migrant households differ from those of permanent migrant households. Secondary survey data does not contain disaggregated information on migration and remittances, so it is challenging to map out the role of migration and remittances in influencing household food security.

A number of studies in different geographical contexts suggest access to remittances can overcome credit constraints in agricultural investment and increase agricultural productivity. Outmigration and the removal of labour may also threaten the capacity of the household to respond to changing work demands. However, most studies find that migrant remittances overcome migration related labour shortfalls and provide capital inputs to invest in agricultural improvement (Gray, 2009; Taylor et al., 2003).

Quinn (2009) investigates the impact of migrant remittances on the decision to adopt advanced technology such as high yielding varieties. This study derived a sample of 2,047 households from a larger survey data set in Mexico and interprets remittances as cash transfers to the household that insure against the risk of agricultural failure and the adoption of new technology, such as high yielding varieties. The use of a robust estimator such as a Probit with two

stage least square and three-stage least square instrumental variable method to address potential endogeneity bias is one of the methodological strengths of the study.

Gray (2009) also investigated the consequences of migration and remittances in smallholder production, agro-diversity and labour participation in agriculture. Using a multivariate statistical model and survey data from 397 households in the Ecuadorian Andes, this study shows remittances compensate for the lost labour effects of outmigration by lessening household credit constraints to invest in agricultural input and hire labour. The impact of remittances on other factors of production such as the land tenure system is not clear. Similarly, Davis and Lopez-Carr (2014) use cross-country survey data from four Central American countries (Costa Rica, El Salvador, Guatemala, and Nicaragua) to study the impact of remittances on smallholder farming practices. Comparing migrant and non-migrant household agricultural investment they show remittances increase land and pasture purchases. This study also triangulated different robust methodological approaches such as multivariate logistic, Poisson, and beta regression techniques. Contrasting this study, Jokisch (2002) compares the land use and agriculture production of migrants and non-migrant households using data from highland Ecuador showing that households use remittances to convert the cultivable land into housing. This study used semi-structured interviews and a survey to collect information on land tenure, agriculture characteristics, labour allotment and acquisition, and information on migration and remittances.

While existing studies investigate the impact of migration and remittances on agricultural investment and productivity, mostly in a Latin American context, Taylor et al. (2003) investigate Asian perspectives using data from 787 farm households in rural China. Their study shows that remittances contribute to household income directly and also indirectly by stimulating crop production. Their findings also indicate that remittances compensate for the lost-labour effect.

However, the income effect of remittances on asset accumulation and access to food is ignored in these studies.

The consequences of migration and remittances on land tenure and associated productivity are explored in Aguilar-Støen et al. (2016) who use data from 401 households in Guatemala. Their study shows that remittances foster more equitable local land distribution. However, this study also suggests the effect of remittances on land tenure is highly contingent on specific migration circuits and context-specific economic factors. According to this study, the international coffee crisis in the 1990s helped migrant families to purchase land from elite families in Guatemala who were not resilient to the disturbance effect of the coffee crisis. As the findings of this study are context specific, caution must be exercised before generalising this result to land tenure and land distribution processes in other locations.

Outside of Latin America, de Haas (2006) has investigated the link between remittances, agricultural investment and agricultural intensification in the Maghreb region. Using survey data from 507 households in Morocco, de Haas shows remittances facilitate the extension of 'oasis agriculture' through the reclamation of new agricultural land in new previously barren areas adjacent to the traditional oasis. The study shows international remittances enable the households to invest more on modern agricultural inputs such as sophisticated irrigation systems. Using a smaller sample (n=64) of household data from Burkina Faso, Zahonogo (2011) also argues that remittances help the household to access production technologies that increase agricultural productivity.

Many studies have adopted a qualitative approach to investigate migration and remittances on the transformation of land for agricultural production. Using data from ethnographic fieldwork in Eastern Guatemala, Taylor et al. (2004) suggest the level of remittances significantly influences

land use and land distribution patterns in Guatemala. The authors identify that households invest remittances in order to convert rainforests into cattle pastures for the cattle business. In the Asian context McKay (2003) uses qualitative interview data from 47 remittance receiving households in the Philippines arguing that remittances are invested in the production of cash crops and converting wet rice cultivation into garden crops.

2.5 Conclusion

A number of inconsistencies and knowledge gaps remain in the area of remittances and their influence on food security. **First**, some general consensus exists concerning how remittances reduce poverty, improve educational outcomes and healthcare provisions, loosen credit constraints, provide hedges against crisis, smooth consumption, and provide safety nets that reduce households' vulnerability. Some studies reveal the negative impact of remittances on economic growth, income, savings, investment, and asset accumulation while others find a positive impact if effective policies and institutions are in place. The findings are thus inconclusive, but this may result from heterogeneous methodological approaches, datasets, and geographical contexts. The traditional view — that remittances are mostly used for 'conspicuous consumption' — fails to recognize how remittances allow for consumption smoothing and provide a risk coping mechanism. Remittances may have a direct income effect on food consumption, and remittance-receiving households thus appear to be better able to withstand food-related shocks, such as a sudden food price increases. Household 'consumption stability' suggests an important human development impact. However, this area is comparatively unexplored, especially in the Asian context.

Second, some recent studies have attempted to examine migration and food security issues employing purely quantitative approaches such as regression analysis using large-scale,

multipurpose survey data. Using this process it is extremely difficult to construct any food security measurement indicators based on the available information in multipurpose household surveys. The assessment of household food security using household per-capita consumption expenditure variables does not reflect the multidimensional aspects of migration and food security. A wide range of issues related to migration and food security, such as economic access to food, the role of land and assets, access to existing food provisions, and diversity in micro- and macro-nutrients cannot be assessed solely using per-capita food consumption data. Therefore, in the area of migration, remittances, and food security more work is needed triangulating different robust indicators, multiple sources of data, and research approaches.

Third, existing studies that investigate the income effects of remittances on household food security mainly use aggregate data that includes both remittances and other non-remittance income. It is extremely difficult to map out the influence of migration and remittances on household's economic access to food if remittances and other income sources are not disentangled. Therefore, it is important to assess the marginal effects of remittances on food security indicators by disaggregating the household's net income variable. None of the existing studies located address this methodological challenge. Therefore, more work is needed using robust quantitative tools to assess the impact of migration and remittances on household food security.

Fourth, in most cases, it is unclear as to whether food insecurity and shortages are drivers of migration or whether migration is a mechanism by which households maintain food security. Under what conditions do households use migration as a risk-coping strategy regarding food security and how do they finance it? These are important issues yet to be fully explored.

Fifth, remittances are altruistic private transfers that have proven to be less volatile than overseas aid and FDI. Migrants' private transfers are not purely economic transactions. Various

social interactions are linked with these transfers; therefore, they are more stable than are other types of financial transfers. None of the studies reviewed here have explored how migration and remittances protect households from food insecurity and anxiety as a result of food price hikes and other shocks related to the financial crisis. Therefore, further work is needed that focuses on the utilisation of remittances in smoothing households' consumption during income shocks and crisis. Taken together, these reasons provide strong grounds for engaging in research on the impacts of migration and remittances on food security.

Table 2-1 Outline of the Emergence of Migration and Development Debate

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
Push-pull theory	1880s	Macro	Economic factors in migration	No	Ravenstein (1885, 1889); Lee (1966)	Neutral	(i) Migration is closely connected with push and pull factors	(i) Overemphasis on economic determinants ignores other factors of migration phenomenon
Neoclassical migration theory	Until 1960s	Macro Micro	Spatial difference in wages and migration	Yes	Borjas (1989), Harris & Todaro (1970), Todaro (1969),	Optimistic	(i) Migration is driven by spatial differences in labour supply and demand, differences in wages between labour-rich versus capital-rich countries and contributes to the optimal spatial allocation of production factors.	(i) Ignores migrant transfers and benefits received by migrant-sending households (ii) Noneconomic factors of migration decision are not addressed.
Keynesian theory	Until 1970s	Macro	Equilibrium recovering mechanism through migration	Yes	Hart (1975), Rapoport & Docquier (2006)	Optimistic	(i) Migration is an equilibrium recovering mechanism. (ii) As household consumption and investment aggregate to the national level, migrants' remittances should have a positive and multiplier impact.	(i) Explains migration process solely by the economic factors and overlooked non-economic factors
Human capital theory	1970s	Micro	Capital endowments, skills as determinants of migration	No	Bauer & Zimmermann (1999), Sjaadstad (1962), Todaro (1969)	Optimistic	(i) Human capital endowments, skills, age, gender, occupation, and labour market status strongly influence who migrates and who does not. (ii) Individuals consider expected returns, opportunities and outcomes of international higher education and work experience when deciding to migrate.	(i) Migration is not always an individual's investment decision or a voluntary process. (ii) Overemphasis on skilled migration.

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
Mobility transition concept	1970s	Macro	Development transition and migration	Yes	Bauder (2001), Skeldon (1990, 2012), Zelinsky (1971)	Optimistic	(i) There is a long-term link between state formation, demographic transitions, economic growth and the internal and international migration. (ii) Migration is an intrinsic part of a broader development transition associated with modernisation, urbanisation, level of economic and human development.	(i) Migration might not be an evolutionary and time bound process and not necessarily linked to different stages of development.
Migration systems theory	1970s	Macro	Spatial and time dimension of migration system	Yes	Kritz, Lim & Zlotnik (1992), Mubogunje (1970),	Optimistic	(i) Migration systems have a spatial and time dimension and migration influence the economic as well as social, cultural, and institutional conditions at both the sending and receiving ends. (ii) The processes operate as a system which links a set of places, flows of people, goods, and services that facilitate further migration. Migration reshuffles the entire development space.	(i) Does not explain how migration system changes and declines over time. (ii) Lack of empirical rigor
Theory of Underdevelo pment	1960s 1970s	Macro (Global)	Uneven development	No	Frank, (1966,1967)	Pessimistic	migration is a response to the spatial uneven development	Overemphasis on the genesis of underdevelopment through the interaction of core and peripheries, no discussion no recommendations on strategies for the periphery to exploit benefits from the economic relationship.

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
Theory of cumulative causation	1960s	Macro	Uneven development and migration	No	Kaldor (1970), Lipton (1980), Massey & Zenteno (1999), Myrdal (1957)	Pessimistic	(i) Migration is driven by different factors such as the distribution of income, the distribution of land, the organization of agriculture, regional distribution of human capital, the networks and culture of migration. The process sustains itself by creating more migration. (ii) Migration helps receiving countries by providing cheap labour and intensifies underdevelopment at the sending end.	(i) The theory acknowledges that cumulative causation leads to uneven development and it can not continue indefinitely. However, the theory does not explain how development can cause the process to cease.
World systems theory	1970s and 1980s	Macro (Global)	Core and Periphery	No	Portes and Walton (1981), Sassen (1988), Skeldon (1997) Wallerstein (1974,1983)	Pessimistic	(i) Migration is driven by the interdependence of global economies, structural changes in the world market and production systems. (ii) Migration is an outcome of ‘disruption’ and ‘dislocation’ of capitalist development.	(i) Overemphasis on the world market, less emphasis on how transformation of production forces influence migration (ii) Fails to recognize micro level factors and perspectives
Brain drain concept	1970s	Macro (Global)	Flight of human capital	No	Adams (1969), Baldwin (1970),	Pessimistic	(i) Outmigration and flight of human capital and highly skilled worker have negative consequences for migrants sending countries.	(i) The benefits of migrants’ transfers are ignored.
Dual labour market theory	1980s	Macro Meso	Segmented labour market in migration system	No	Bauder (2001), Berger & Piore (1980), Bulow, Lawrence & Summers. (1986), Piore (1983)	Pessimistic	(i) Migration is driven by demand side factors such as demand for low skilled labour in advanced countries, not by supply side and migrants’ rational choice decision. (ii) Migration contributes to economic growth in industrialized countries by reducing labour shortages.	(i) Push factors are included in the analysis. (ii) Overemphasis on the segmented labour market and fails to recognise migrants’ skill endowments.

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
Relative deprivation theory	1980s	Micro Meso	Relative deprivation and migration	Yes	Bhandari (2004), Quinn (2006) Stark & Taylor (1989), Stark & Taylor (1991)	Pessimistic	(i) Absolute income differences and relative deprivation influence households' migration decision. (ii) Individuals from relatively more deprived households are more likely to migrate	(i) The dynamics of migration are not always a self-perpetuating process and do not aim at maximizing income all of the time.
Migration, Remittances, Aid and Bureaucracy (MIRAB) model	1980s	Macro	Role of network in migration	Yes	Bertram & Watters (1985), Bertram (1999, 2006), Frankel (2006)	Neutral	(i) Migrants' networks, e.g. 'kin corporation,' promote large-scale emigration from small economies. (ii) Remittances are key development resources that support families and provide capital-scarce small countries with development finance.	(i) Relatively less influential and contextual. The analysis is based on the more matured migration countries (ii) Provides one-sided interpretation of consequences of migration and remittances ignores the broader development dynamics.
Migrant syndrome concept	1980s	Macro	Migration as outcome of underdevelopment	Yes	Reichert (1981), Taylor (1999)	Pessimistic	(i) The migration process is like a vicious circle; an outcome of underdevelopment which furthers underdevelopment through various negative consequences.	(i) Its conceptual framework is not a cogent theory (ii) Development impacts of migration are not accommodated in the analysis.
New Economics of Labour Migration (NELM)	1980s and 1990s	Micro	Migration a strategy to mitigate production constraints	Yes	Stark (1991), Taylor (1999), Taylor et al. (2003)	Optimistic	(i) People act collectively to maximize income and minimize risks. Migration and remittance behaviour is a strategy that mitigates production constraints in imperfect market environments. (ii) Remittances enable households to overcome production constraints, therefore, migration is expected to have a positive effect on development.	(i) Sending side bias. (ii) More emphasis on households as a unit of analysis neglects broader perspective and development space.

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
Migration as livelihood strategy concept	1990s to 2000s	Macro	Livelihood strategy through migration	Yes	Carney (1998), de Haan (2000), de Haan & Zommers (2005). Gardner (1995), McDowell & de Haan (1997)	Optimistic	(i) Households send workers abroad to increase income relative to other households and reduce deprivation. (ii) Sending abroad one of the members of the households is a way of reducing the risk of insufficient household income.	(i) Migration is a selective process. Different factors, such as skill endowment and certain income threshold, are neglected in the analysis
Brain gain concept	1990s	Macro	Transfer knowledge and skill through migration	Yes	Beine, et al. (2001, 2008), Elmenstein & Stark (1998), Mountford (1997), Stark(2003),S chiff(2005),Vi dal (1998)	Optimistic	(i) Migration increases the expected returns in poor countries through transfer of skills, knowledge and attitude, (ii) Migrants may determine an increase in trade and foreign direct investment and transfer pecuniary and non-pecuniary resources.	(i) Overemphasis on return migrants. (ii) Analysis is biased on core receiving countries that train students
Network theory	1990s	Meso	Networks in facilitating migration	No	Fawcett (1989) Vertovec (2002), Dustmann and Glitz (2005)	Optimistic	(i) Existing networks and migration circuits lead to further migration. (ii) Networks reduce the cost of migration and risk and increase the expected return from migration.	(i) The analysis is narrowly focused on more mature migration stages (ii) Ignores broader development perspectives
Migration hump concept	1990s	Macro	Role of wealth is migration system	Yes	Martin. (1993), Martin & Taylor (1996)	Optimistic	(i) A certain threshold of wealth is necessary to finance the costs of migrating; therefore, increases in wealth tend to lead to more migration. (ii) Development leads to generally increased levels of migration	(i) Still fragmentary concept, not a cogent theory (ii) Empirically disproven assumption
Neoliberalis m	From the late	Macro (Global)	Neoliberal policy	Yes	Burgess (2009),	Pessimistic	(i) Declining living standards and insufficient jobs due to neoliberal	(i) The contribution of migrants' transfer is not

Theories/ Conceptual framework	Decade/ Year	Level of Analysis	Key Variables	Remittance variable in the analysis	Related references	Migration- development relationship	Major assumptions/Views about migration development nexus	Critique
	1970s to date		reform and migration		Canterbury (2012), Delgado Wise & Márquez, (2009, 2012), Lawson (1999), Popke & Torres (2013) Schierup, et al. (2006)		policy reform accelerate the flow of migration between the periphery and the centre (ii) Migrants contribute to the development of core countries providing cheap labour. However, migrants remain socially and economically exploited.	acknowledged appropriately. (ii) The outcome of neoliberal policy reform is geographically uneven. However, the assumptions might not be applicable for all migrant sending countries.

Source: Author.

A detailed exposition of different theories is available in Arango(2000), de Haas (2010, 2012), Jennisen (2003), Kurekova (20011) and Massey et al. (1993).

Chapter 3 Impact of International Migrants' Remittances on Household Food Security in Bangladesh

3.1 Introduction

The number of international migrants has reached 247 million (World Bank, 2015). The stock of migrants is more widely distributed across countries and often considered the most visible manifestation of globalisation (Favell et al., 2007; Sassen 1998). Some of the notable consequences of international migration are the transfer of financial remittances,⁶ return migration and utilisation of knowledge, skills development in the migrants' home countries, diaspora involvement in development through trade, investment, networks and migrant remittances (Kapur, 2010; Massey & Taylor, 2004). Internationally, \$583 billion in migrant remittances were transferred in 2015 with developing countries receiving \$436 billion (World Bank, 2015). Globally these 'unrequited transfers' are the second largest source of external finance, twice the size of Official Development Assistance (ODA) and almost as large as Foreign Direct Investment (FDI). Surprisingly the existing economic literature largely ignores remittances and their impact on households' food security and thus human development. The objective of this chapter is to examine the impact of migrants' remittances on households' food provisioning systems in Bangladesh.

⁶ International Organization for Migration (IOM) defines 'remittances' broadly as 'monetary transfers that a migrant makes to the country of origin. In other words, financial flows associated with migration. Most of the time, remittances are personal, cash transfers from a migrant worker or immigrant to a relative in the country of origin' (IOM, 2009a).

Using different food security indicators and scientifically validated measurement tools, this study shows: (i) migrant households receiving remittances are better off than non-receiving households in terms of their food security situation; (ii) cash remittances are spent to maintain adequate consumption levels and improve the ability to acquire a sufficient quality and quantity of food to meet household members' nutritional requirements; (iii) remittances help to improve households access to important nutritional inputs and provide dietary diversity; (iv) remittances allow households to cope with shocks that threaten food security status. These findings suggest that remittances improve food security for recipient households, which may have a positive impact on human development in the long run.

The remainder of this chapter proceeds as follows. Following this introduction, section two and three briefly describes the concept of food security, how food security is neglected in migration and remittance research and the conceptualization of migration and food security links. Section five and six discuss the methodological approach and the findings of the research.

3.2 Conceptualising Food Security

'Food security' as a concept is complex and multifaceted. Advancement in poverty research and the development of analytical rigor in different dimensions of economic wellbeing and capability approaches has influenced the evolution of the concept of 'food security'. The concept has gone through substantial changes and redefinition during the last four decades. Some authors identify more than 200 definitions that indicate multifaceted dimensions of food security (Maxwell and Smith 1992). Although the conceptualisation of food security was more concentrated and focused on technological innovations in production and supply until the mid-1970s, the paradigm has moved toward issues of entitlement and capacity since the mid-1970s. Food security became an important item in development policy agendas in the wake of the

1974 World Food Conference, which was in response to global food price hikes in the preceding two years. The first official definition of Food Security emerged on the eve of the conference which stated food security as “availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (UN, 1975). The definition and concept of food security during the mid-1970s was heavily concentrated on the supply side and the stability of food production. However, the concept and the discourse underwent a number of shifts after that. Maxwell (1996) identified three distinct paradigm shifts in thinking on food security (Barthwal-Datta, 2014, Maxwell, 1996).

First, the focus of food security discourses shifted from the ‘global’ and ‘national’ scale to the household and individual level through the late 1970s and into the early 1980s. The key concern and analysis about food security shifted from food supply and availability to the households’ access to food. Sen’s seminal work on famine substantially influenced the shift. Drawing on evidence from tragic and devastating famines, Sen argued that famine was not caused by the problem of availability of food supply; rather it was the lack of peoples’ access to food (Sen, 1981). This suggests that having enough available food at national and local level is a necessary but not sufficient condition for ensuring that households have adequate access to food.

In the second paradigm shift, the focus and attention of the food security concept moved from ‘food first’ to a ‘livelihood first’. It highlighted the necessities of livelihood security as a critical condition and priority of households’ food security. The second paradigm shift took place in mid 1980s after the African famines of 1984-85. It was observed that people chose to

go hungry to preserve assets during the famine in Darfur (de Wall, 1991). Lesson learned from devastating famines in Africa, shifted the food security thinking from merely focusing on supply and availability of food, towards secure and sustainable livelihoods (Carney 1998; James 2008; Scoones, 1998).

The third paradigm shift indicates a move away from 'objective indicators' to 'subjective perceptions'. It highlighted the importance of subjective measures of food security over purely calorie counting approach. In the poverty literature there has been a longstanding distinction between "the conditions of deprivation", referring to objective analysis, and "feelings of deprivation", related to the subjective perception (Townsend, 1974). The same idea was incorporated into the food security discourse as purely calorie counting approach was not sufficient enough in assessing multidimensional aspects of food security such as the quality of food, food related behaviour, experiences, local food habit, and the cultural acceptability of particular foods.

FAO, one of the institutional champions in food security related issues, has successively revised the definition of food security in last three decades to keep pace with these paradigm shifts (Barthwal-Datta, 2014). The signatories of 1996 summit acknowledged the significance of having three equally important core concepts: (1) Food availability, (ii) Food access and (iii) Food utilization. FAO (1995) explicitly defined three core components where food availability is defined as the sum of domestic production, imports, food aid and changes in national food stock. Food access is a measure of peoples' entitlement to food. It refers to the purchasing power of people. Food utilization relates to proper use of food, appropriate food

processing and storage and application of knowledge of nutrition. In 1996 World Food Summit, FAO articulates, “food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. Over the years it has become one of the widely used definition of food security.

Even when food supplies are adequate at the aggregate level, a number of factors may prevent households or individuals from accessing food, such as lack of purchasing power, lack of asset or access to credit, lack of access to land for personal cultivation (Sen, 1981).

Migration can influence all three components of food security. For example, remittances can improve households economic access to safe, sufficient and nutritious food. Remittance can help to lessen investment constraint in agriculture and can facilitate production. Migration can also improve the food related knowledge and exposure to improved dietary practices, which can influence food utilisation. However, as this study specifically investigates the impact of remittances on food security, it is focused on the access dimension of food security.

3.3 Conceptualising Migration and Food Security Links

Cash remittances are private resource transfers and spent partly on consumption and partly on investment and therefore their impact on development is dauntingly complex. While empirical research on different dimensions of migration and development is burgeoning, with few exceptions the relationship between migration and food security has been underexplored until recently (Crush, 2013; Karamba et al., 2011; Nguyen, & Winters, 2011; Regmi & Mishra 2016). With some national variability, migrants’ remittances are estimated to constitute approximately 30 to 40 percent of household’s income (Adams, 2011). As a result, these resources help to secure and smooth the recipients’ consumption and are a critical component

of household food security. There are a number of different channels and mechanisms through which migration and remittances might influence food and nutrition security.

First, income from remittances provides security for the household against the risks of ‘consumption instability’. Since remittances constitute a substantial portion of households’ income, they help to raise and improve the household’s ability to access sufficient, safe and nutritious food to meet their dietary and nutritional needs. Cash remittances also impact on household dietary diversity. Sudden increases in food prices and other income-related shocks could reduce households’ dietary diversity. To counterbalance the impact of these shocks, affected households usually switch from more expensive, nutritious food to cheaper and less healthy foods. Remittances are predominantly altruistic transfers that are resilient during financial crises and during income shocks (Sugiyarto et al., 2012). Increasing the purchasing power of households through cash remittances may improve their dietary diversity status thus mitigating micronutrient malnutrition. **Second**, increased expenditure from remittances on consumption has a positive impact on health and nutritional outcomes in the long run. A number of studies show that health and child ‘anthropometric’ parameters are better in remittance-receiving than non-receiving households (Azzarri & Zezza, 2011; de Brauw, 2011).

Third, remittances may influence food security by increasing capital investment in the agricultural sector in receiving countries. In the context of fragile financial markets in developing countries, remittances may increase agricultural investment and help bypass high borrowing costs from formal credit and insurance institutions (Chiodi et al., 2012; Jokisch, 2002). It may also ease the credit constraint and aid the adoption of new technology (Findley & Shaw, 1998; Taylor & Martin, 2001) and high yielding varieties (Quinn, 2009), as well as encourage efficient irrigation (Konseiga, 2004) and accelerate agricultural production. The

adoption of new technology in the agricultural sector may also influence non-migrant farming practices through spillover effects (Taylor & Martin, 2001). Remittances may also potentially compensate for the loss of outmigration by providing capital for hiring labour from surplus labour markets. Migrant remittances may have a direct income effect on food consumption, and remittance-receiving households might appear to be better able to counterbalance food-related shocks, such as an increase in food prices. Households' 'consumption stability' suggests an important human development impact. However, food security issues are largely absent in the global agenda on migration and development (Crush 2013) and certainly underexplored in the Asian context.

3.4 Methodology

Data was gathered for this research from four villages in two migrant concentrated source districts in the eastern region of Bangladesh. The quantitative methods of this study involved a customised survey administered at the household level during March and April 2014 and again from November 2014 to January 2015. The following section describes the methodology used including a description of the location of the study, survey design, sample selection process, and the adaptation of appropriate food security measurement tools in Bangladeshi rural context.

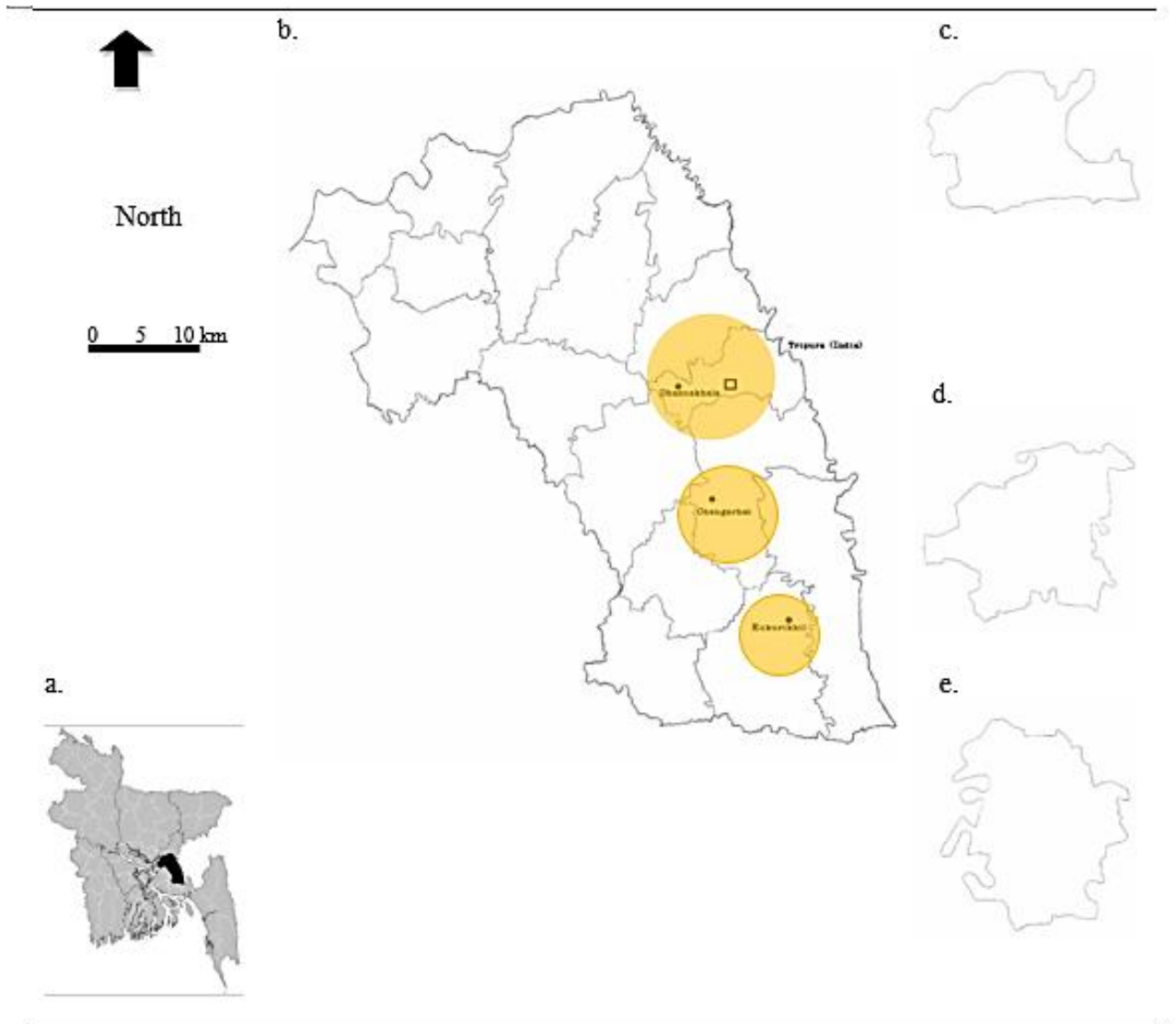
3.4.1 Research Location

Bangladesh is divided into seven major regions called divisions, which are divided into 64 districts. These districts are further subdivided into 493 subdistricts called 'Upazila.' Comilla and Chandpur were selected as the research sites because of their geographic location, the existence of widespread social networks, their migration history, and their diversified pattern

of international migration. International labor migration of unskilled workers has increased substantially in recent years in Bangladesh and it is concentrated in a few districts. Approximately 40% of Bangladeshi migrant workers originate from only five of the 64 districts, including Comilla and Chandpur (ADB, 2009). Moreover, as the researcher was born and raised in the area, his familiarity with its migration patterns and knowledge of local culture and dialects was useful to the research. Chandpur district is located about 120 km southeast of the capital city, Dhaka. It is also a densely populated district with 1,333 people in per square kilometre (BBS, 2011). The district consists of eight Upazilas. *Purba Fathepur* from *Matlab Uttar Upazila* was the location of the study. The village is located about 40 kilometres from the district headquarters (see figure 3.1).

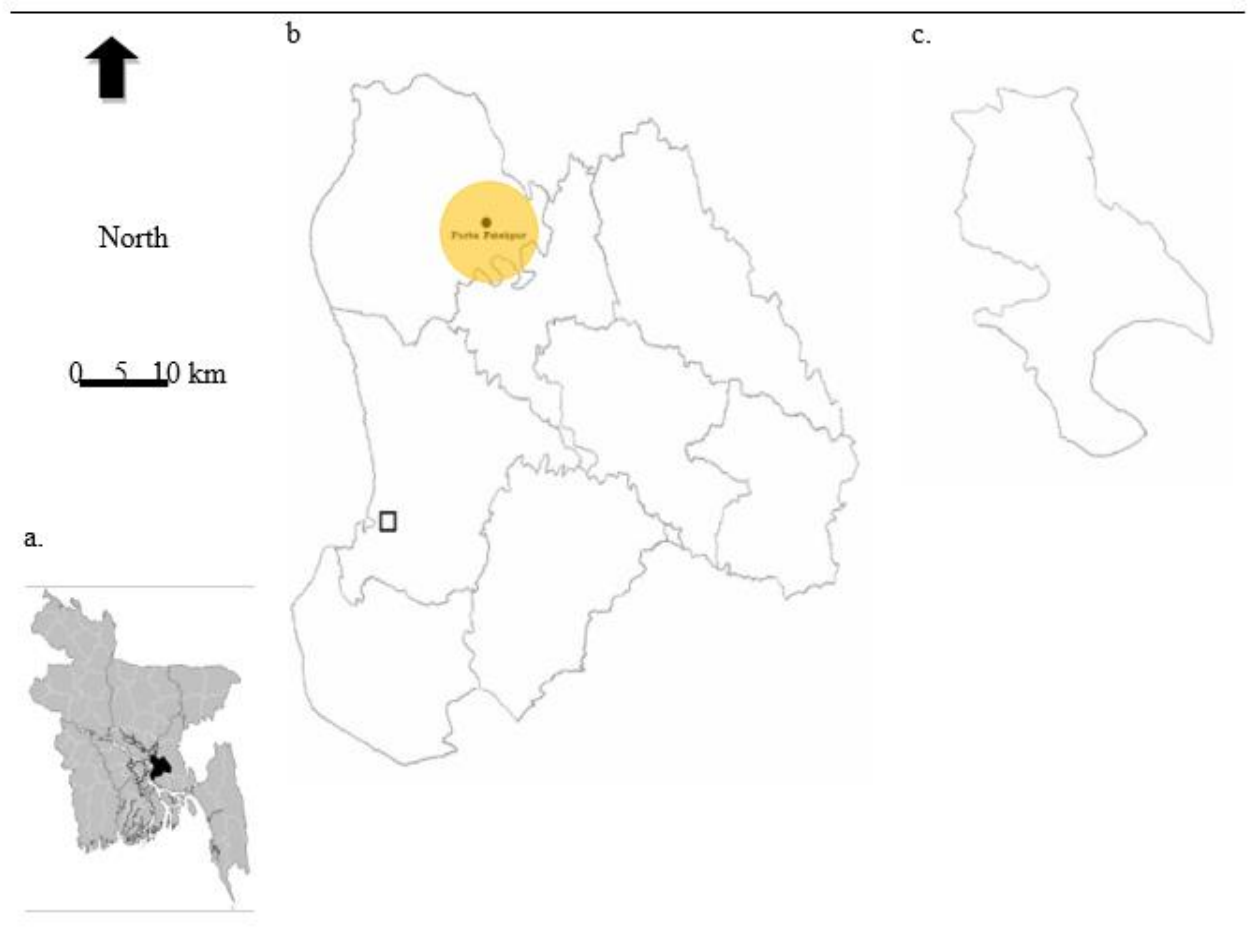
The Comilla district, which comprises 16 Upazilas, is located 100 Km southeast of the capital city, Dhaka. It is the second largest district in eastern Bangladesh and is one of the three oldest districts in Bangladesh. Comilla is a densely populated district with approximately 1,486 people per square kilometer (km). Three out of 16 Upazilas were selected for the survey. Three villages, *Dhanuakhala* from *Sadar Upazila*, *Chengarhat* from *Sadar Dakshin*, and *Kukurikhil* from *Nangolkot Upazila* were selected for the study as these villages are associated with a greater level of out-migration. *Danuakhala*, *Chengarhat*, and *Kukurikhil* are located 20 km west, 15 km southeast, and 45 km southeast, respectively, from the district headquarters. Chandpur district is located about 120 km southeast of the capital city, Dhaka. It is also a densely populated district with 1,333 people in km² (BBS, 2011). The district consists of eight Upazilas. The study area for the *Matlab Uttar Upazila* was *Purba Fathepur*, 40 km from the district headquarters.

Figure 3-1 Map of the Research Sites in Comilla district.



Note: The map is drawn by the author using the reproduced base map of the Local Government Engineering Department (LGED) Bangladesh. The original map was prepared by LGED based on a GPS field survey in 1999. a. Comilla district is marked with black ink in the Bangladesh map. b. Comilla district map shows the boundaries of 16 Upazilas and the location of the areas surveyed for this study. A square box indicates the location of the district headquarters. The size of the bubbles indicates the distribution of the sampled household c. Map of the surveyed village Dhanuakhala. d. Map of the surveyed village Chengarjat (Bagmara Union) d. Map of the surveyed village Kukurikhil (Roykot Union).

Figure 3-2 Map of the Research Site in Chandpur District.



Note: The map is drawn by the researcher using the base map of Local Government Engineering Department (LGED) Bangladesh. The original map was prepared by LGED based on GPS field survey in 1999. a. Chandpur district is dark-shaded in the Bangladesh map. b. District map shows the boundaries of eight Upazilas and the location of the surveyed village. A square box indicates the location of district headquarters. The size of the bubbles indicates the distribution of the sampled household c. The map of the surveyed village Purba Fatepur.

Migration from this region can be divided into three major streams: low-skilled contract-based migration to the Arab Gulf; low- and semi-skilled labour migration to emerging Southeast Asian countries including Singapore and Malaysia; and high-skilled migration to traditional immigrant destination Organisation for Economic Co-operation and Development (OECD) member countries. Remittances in Bangladesh come from these distinct destinations. In contrast to the migration to the OECD countries, migration to the Middle East and Southeast Asia is mostly short-term employment involving specific contracts with migrants returning home after completion of the contract. Outmigration from the surveyed villages predominantly falls within the first two categories. The lack of year-round employment and disguised underemployment, as well as the widespread poverty in rural areas contributed to the predominance of economically motivated international migration from this region.

3.4.2 Survey Design

One of the challenges for this study was to select a representative and unbiased sample so that data can be used more confidently for development intervention and policy recommendations. Due to limited time and resources, the researcher adopted the World Health Organization's (WHO) Expanded Programme on Immunization (EPI) cluster sampling method (WHO, 1991). While this method is widely used in health and other social science research, one criticism of this method relates to the second stage of the sample selection process, which principally uses 'quota sampling'; this approach lacks probability footing and can suffer 'sampling bias' (Turner et al., 1982; Lemeshow et al., 1985). Moreover, through the process respondents can be selected merely from concentrated areas or circuits. To avoid some of these biases, to provide more scientific rigor and to ensure the samples are not selected from a concentrated area or specific pocket, the second stage of the process was modified for this study.

Consequently, specific steps were followed to select a representative and unbiased sample of both migrant households (MHs) and non-migrant households (NMHs).

A number of methodological issues are relevant to understanding how this research was conducted. **First**, for meaningful inference of migration and food security linkages, it was necessary to compare the food consumption pattern and food security situation of MHs and NMHs and therefore, data were collected from both household types. Information on the ratio of migrant and non-migrant populations at the district level were neither available nor feasible to estimate. As the customised survey was designed to investigate the link between migration and food security, as well as other welfare implication of remittances at the household level, a higher number of MHs were targeted for the survey. Data were collected from 526 MHs and 227 NMHs: a 3:1 ratio.

Second, available data shows that outmigration is highly concentrated in southern Bangladesh, with 78.2% of migrant outflows from Dhaka and Chittagong. The remaining four divisions account for only 21.2% of migrants. At the district level, Comilla stands out as the leading district for outmigration (15% of the outmigrants from the country). One of the neighbouring districts Chandpur is the 6th leading supplier of migrants (with 6.23% of national outmigrants) (ILO 2010, Islam 2014).

Third, statistics on out-migration at the Upazila (Subdistrict) level are not available, the Upazilas and the villages were selected after consulting with the Upazila Nirbahi Officers (Chief Executive Officers of Upazila), the district statistical officer, and Union Parishad (UP) chairmen who are familiar with the magnitude and trend of outmigration from the district.

Based on these consultations, four villages from four Upazilas, one peri-urban and three rural, were selected for this study.

Fourth, the villages were divided into four segments, approximately equal in size, and based on locally known informal neighbourhood segmentation; *Uttar para*, *Dakshin para*, *Paschim para*, *Purba para*. The households that had at least one member living abroad during the research were interviewed from each of the segments following the ‘random walk’ method (WHO,1991). One NMH, who had never been involved in international migration, was interviewed after interviewing every three MHs. Five locally-based enumerators were hired and trained to conduct the survey. The Upazila Nirbahi Officer (UNO) and Union Parishad (UP) members in the selected villages helped to raise the profile of the study and increase participation. Call backs were not implemented in some non-response cases. The study employed the local concept of ‘households’, *Khana*, as a unit of analysis, which consists of a group of people who share living quarters and their principal meals. The respondent was the head of the household or person most responsible for food provisioning in the household. The above approach avoided the costly and time-consuming expense of listing all the households, ensured probability footing and reduced the bias and variance of the estimates. Thus, every eligible household had a known (non-zero) chance of being selected.

The questionnaire was designed to capture demographic characteristics, dwelling conditions, household size, number of children, level of education, asset and land holding, income and expenditure profile, and remittance utilization patterns. A number of modules of scientifically validated instruments were included in the questionnaire to capture food security status and experiences. While the survey was specifically targeted to investigate the impact of migration and consequent remittances on household food security, for a complete

understanding of the consequences it was also necessary to collect information on complex migration-related financial portfolios of the households. Thus, a specific module on the motivation of migration, migration finance, sources of migration associated expenses, the role of land in the migration process, were included in the questionnaire.

3.4.3 Designing Measurement Indices for the Bangladeshi Cultural Context

Considering the multifaceted dimensions of both migration and food security, it is unlikely that any single measurement indicator or approach can effectively assess migration and food security linkages. Moreover, it is not easy to decide on appropriate tools from the wide array of indices that are available for a particular research context. Use of multiple measurement indicators allows a more complete and holistic understanding of these linkages. To identify and select adequate indicators, numerous aspects have to be taken into consideration, including measurability, reliability, efficiency, and cost-effectiveness. In addition, the simplicity of interpretation, level of disaggregation, and credibility in Bangladesh cultural contexts, were considered (figure 3.3).

Figure 3-3 Comparing Different Food Security Measurement Indicators

Domain/ Loci Measured	Metrics	Degree of Sensitivity to Cultural Context	Cost of Data Collection	Required Timeframe	Complicity/ Skill in data Collection	Susceptibility for Misinterpretation
		1	2	3	4	5
Self-reported behaviors, experiences, and conditions	HFIAS	L	M	M	M	M
Diversity, Quality of diet	HDDS	L	L	L	L	L
Coping strategies	CIS	L	L	L	L	H
Economic gauge	Per capita food expenditure	L	L	L	M	M

Source: Authors' own construction based on empirical literature, including Hoddinot (1999); Hoddinot & Yohannes, (2002); Santeramo, (2015); Jones et al. (2013).

After critically evaluating the purpose of the different metrics and their underlying constructs, four categories of food security assessment tools were included in the questionnaire: (i) a perception based indicator, the Household Food Insecurity Access Scale (HFIAS), was used to assess food access; (ii) a dietary diversity and micronutrient sufficiency indicator, the Household Dietary Diversity Score (HDDS); (iii) the Coping Strategies Index (CSI) was used to compare the level and degree of food-related coping strategies, vulnerability, risk, and consumption fluctuation in MHs and NMHs; and (iv) specific questions were included in the questionnaire on food-related expenditure and family size to estimate the per-capita food consumption expenditure. Moreover, a self-assessment question on how food remittances improved the food consumption pattern in the household also was included in the

questionnaire. The survey was conducted in the local language, Bangla. All translations were done by the researcher who followed established practices of cross-language research to ensure the accuracy of data (Bracken & Barona, 1991; Chang, Chau & Holroyd, 1999; Harkness, 2003; McDermott & Palchanes, 1994; Temple, 1997; Temple & Young, 2004).

3.5 Findings and Discussion

The following section reports the key findings of this study. First, it describes the household's demographic and socio-economic profile then it moves into the comparison of food security conditions of the MHs and NMHs.

3.5.1 Demographic Profile of the Household

The survey covered 526 MHs and 227 NMHs. The average size of the MHs was 6.1 compared with 6.2 for the NMHs. The age range of the MHs sample varied from 19 to 78 years old, with the mean 45.17 years old. A slightly different dispersion was found for NMHs, where the age range was from 21 to 75 years old, with the mean 47.44 years old. More than 57% of migrant households were female-headed, compared with 16% for non-migrant households. This higher number of female-headed MHs is an outcome of the migration of the male household head. Irrespective of their gender, household heads had a low level of education. Over 37.2% of MH heads reported that they had never received any formal education compared with 56% for NMH heads. Some 37% of MH heads had completed primary school, compared with 22% for NMH heads, while 25% of MH heads reported they had completed secondary school certificate, diplomas, and degrees compared with 22% for NMH heads. The survey did not find any significant difference between the demographic profiles of MHs and NMHs except for the gender dimension.

3.5.2 Household Land Holdings

The two main components of net wealth in the surveyed region are homestead and farming land. Possession of homesteads and land ownership are used as proxy variables to indicate the economic status of the MHs and NMHs. For subsistence farmers, land is a stable source of income compared to other rural casual occupations, and the entitlement of food often depends on the household's own production and access to land in the surveyed region. The amount of cultivable land owned by a household was reported in decimals in the survey and converted into acres. MHs were mostly lower-middle income and middle-income earners. The majority of MHs had homestead land (97%) compared with 90.3% of NMHs. The survey shows, however, that 6.08% of MHs and 14.1% of NMH households do not have any farming land (Table 3.1).

Table 3-1 Distribution of Land Ownership:

Amount of agricultural land	Migrant households		Non-migrant households	
	No.	% of households	No.	% of households
Landless	32	6.08	32	14.1
0.01- 0.25	108	20.53	69	30.4
0.26 - 0. 50	159	30.23	24	10.57
0.51- 0.75	113	21.48	65	28.63
0.76 – 1	42	7.98	18	7.93
More than 1	72	13.69	19	8.37
Total	526	100	227	100

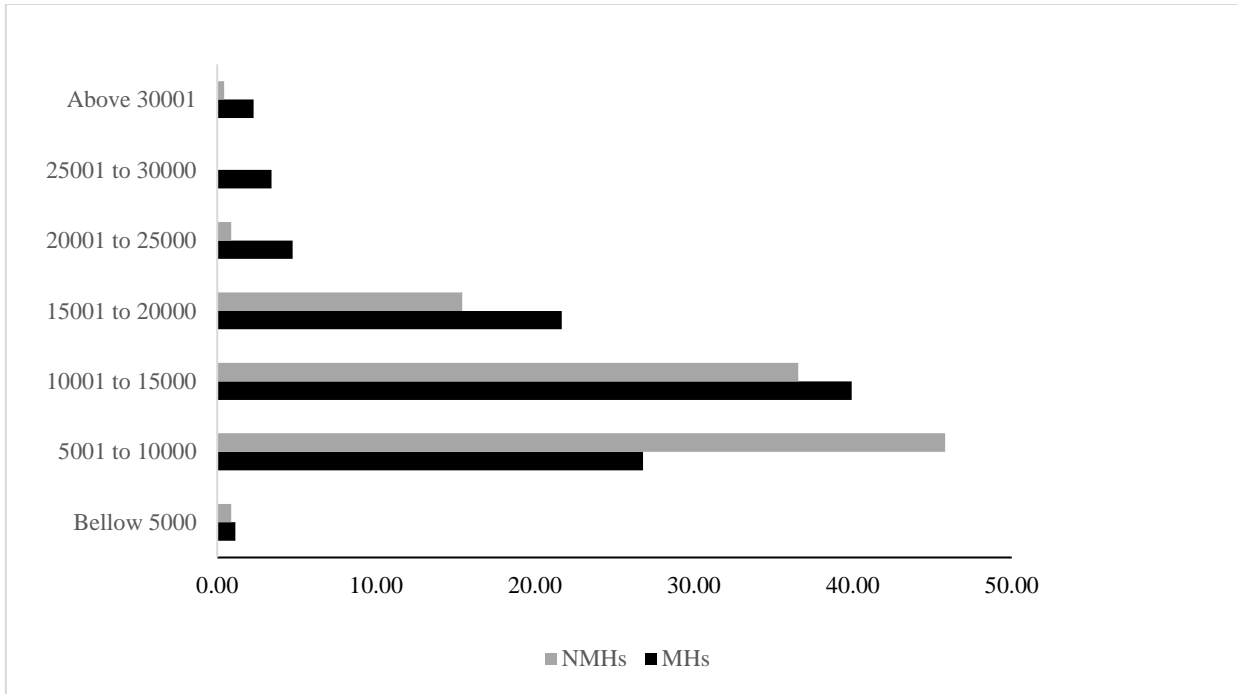
Note: Amount of land reported in Acre (100 decimal=1 Acre and 1 Acre=4046.86 sqm

For MHs, mean landholding size per household is 0.53 acre, ranging from 0.01 to more than 1 acre, compared with 0.44 acre, ranging from 0.01 to more than 1 acre for NMHs. Despite the fact that agriculture is the largest source of non-remittance income for both MHs and NMHs, more than 56.84% of MHs and 55.5% of NMHs have less than 0.5 acres of land.

3.5.3 Income Profile of the Household

Household income largely shapes the food security situation and household food provisioning (Guo, 2011; Leete & Bania, 2010; Loopstra & Tarasuk, 2013). All sources of income were included when calculating household income. The average total gross monthly income of MHs is Bangladeshi taka (BDTK) 14,832 (U.S. \$190), and the median is BDTK 13,500 with a standard deviation 6390 BDTK. For the NMHs, mean, median and mode income are BDTK 11,916, BDTK 1,200, and BDTK 1,000, respectively. A total of 27.95% of MHs reported a combined household income of less than BDTK 10,000 (U.S. \$150) while 46.69% of NMHs reported their income was less than BDTK 10,000. A total of 10.45% of MHs reported a household income of more than BDTK 20,000 compared with only 1.32% of NMHs. The results show that the MHs are better off in terms of income and wealth as compared to the NMHs (Figure 3.4).

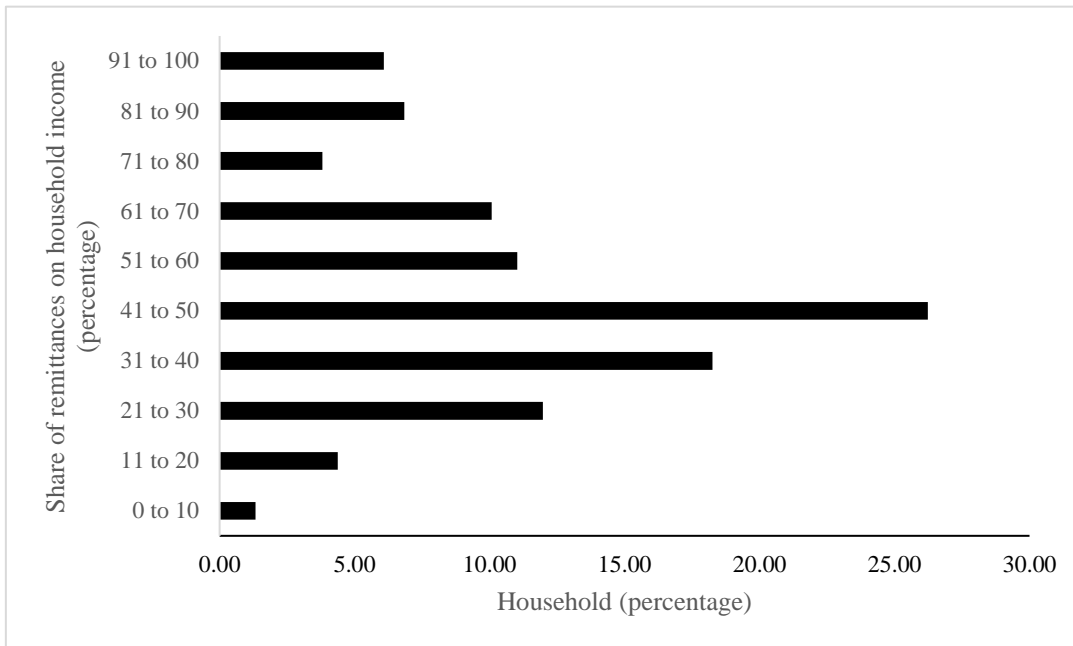
Figure 3-4 Percentage Distribution of the Respondents' Household Monthly Income



Note: Figure is in Bangladeshi taka (BDTK), 1 US\$= 78.14 BDTK

Both MHs and NMHs are engaged in a mixture of on and off-farm work, such as seasonal and part-time work, and seasonal small-scale crop trading. Although a large number of the households (more than 70%) in the survey are farmers by profession, their livelihood also depends on other sources of income. Subsistence production is often insufficient to feed family members. Additional resources are necessary to procure food from the local market. NMHs lack any supplementary source of income, which makes their income smoothing ability volatile and particularly susceptible to economic hardship. On the other hand, remittances made up from 40 to 100% of total household income for more than 64% of MHs (Figure 3.5). As remittances constitute a significant source of income for MHs, the latter can potentially reduce their income uncertainty.

Figure 3-5 Share of Remittances in Recipient Household Incomes



3.5.4 Demographic Profiles of Migrants

Migrant members of the surveyed households were overwhelmingly male (98.67%). Male-dominant migration may be due to the restrictive migration policies of the sending and receiving government and conservative values, as well as socioeconomic and cultural conditions. The average age of the migrants was approximately 33.64 years old. Forty-six percent of migrants were between 15 and 29 years, almost 39% between 30 and 40 years and the remaining (7.41%) were older than 40 years. Most of the migrants were not highly educated. More than half of the migrants had up to secondary school education while 6% had a graduate-level education.

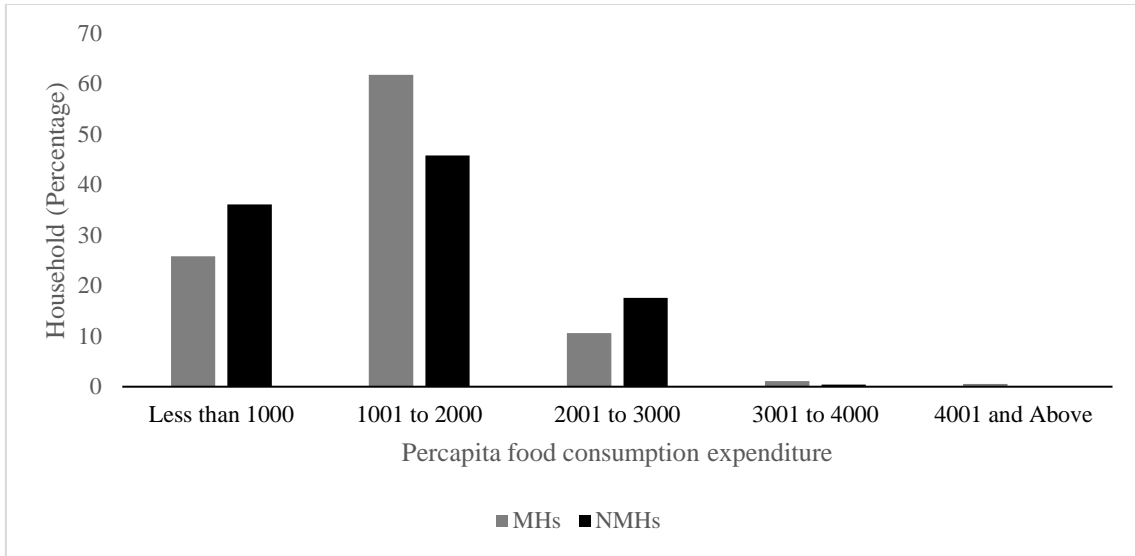
3.5.5 Remittances: A Critical Component of Household Food Security

Both MHs and NMHs rely on their off-farm income to purchase their food and groceries. In the current study, a major proportion of household income is spent on purchasing food. The mean food consumption expenditure on food for the MHS was BDTK 8,191 (U\$104) per month, which is significantly higher than the amount spent on other common categories, including education and medical expenses. This situation reflects the fact that, without remittances, the amount spent on food would drop significantly. Remittances are, therefore, a critical device for household food security. On average about 49.42% of the total earnings of the MHs is contributed by remittances. This overwhelming dependence on remittances means that households' food provisioning and food security depend largely on remittances.

Table 3-2 Food Consumption Expenditure of MHs and NMHs

Food consumption expenditure (Percentage of household total income)	Migrants' households		Non-migrants' households	
	No.	% of households	No.	% of households
<30	9	1.71	0	0.00
31 - 40	53	10.08	4	1.77
41 - 50	116	22.05	13	5.75
51 - 60	123	23.38	33	14.60
61 - 70	150	28.52	69	30.53
71 - 80	54	10.27	67	29.65
81 - 90	18	3.42	40	17.70
91 - 100	3	0.57	0	0.00
Total	526	100.00	226	100.00

Figure 3-6 Per capita food consumption expenditure of MHs and NMHs

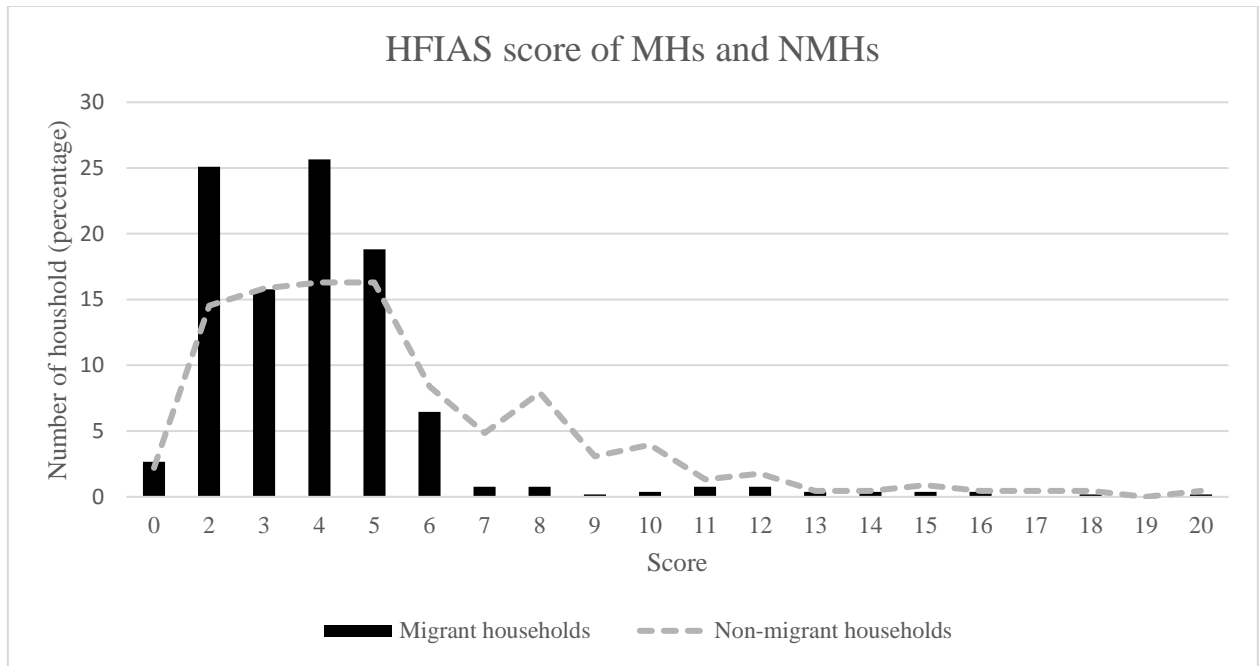


Although different scientifically validated food security measurement metrics were used in the survey, a variable named ‘per capita food expenditure’ was created to assess and compare the expenditure on food per person. MHs spent slightly more money per person per month for food compared to NMHs (Figure 3.6). MHs in the surveyed area spend BDTK 1,454 on average per person on food in a month. The median share of food consumption expenditure in (gross) income for MHs is 60%, compared with NMHs, for which the median is 70%. This difference means that migrants might be able to have some additional resources to allocate to other expenditures, including education and healthcare.

3.5.6 State of Food Insecurity, Related Behaviours, Experiences and Conditions

The HFIAS was used to assess household food security status specifically food-related behaviours, experiences, conditions and the severity of food access problems of MHs and NMHs. Interviewees in both MHs and NMHs were asked nine widely accepted and validated questions regarding food consumption, thus providing insight into their subjective experiences of four domains of food insecurity: food provisioning-related anxiety and uncertainty; perceptions that the quality or quantity of accessible food is not adequate; reduced food intake by adults; and reduced food intake by children. Based on the perception and experience of food vulnerability perceptions, a score was generated on a 0 (most secure) to 27 (most insecure) point scale (Coates, Swindale & Bilinsky, 2007). MHs are more likely to be food secure than are NMHs (Figure 3.7). A total of 69.2% of the MHs had a score between 0 to 4, compared with 48.9% of NMHs. Twenty-seven percent of MHs had a score between 5 to 10 compared, with 44.5% of NMHs. The remaining 3% of MHs had a score greater than 11, compared with 6.6 % of NMHs.

Figure 3-7 HFIAS of MHs and NMHs



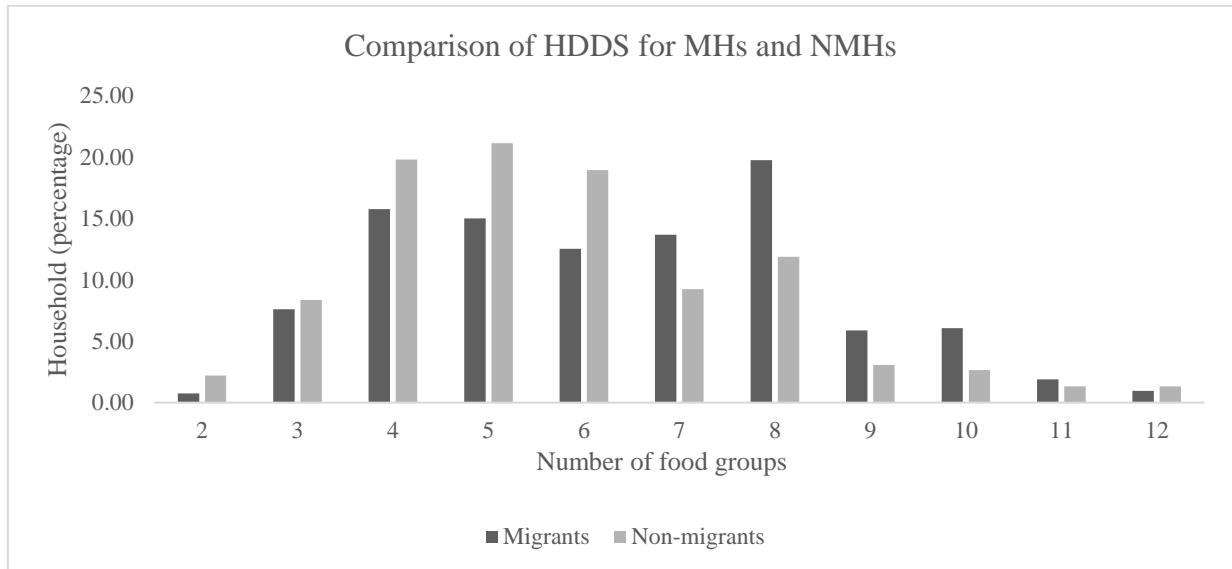
3.5.7 Remittances and Dietary Diversity

HDDS is one of the most widely used measures to determine how many food groups were eaten by household members in the previous 24 hours. A standard list of 12 food groups is used for this indicator (Hoddinot, 1999; Swindale & Bilinsky, 2006). Information for each group is of a bivariate type (yes/no). All food groups have the same importance (relative weight equal to 1), with each group consumed providing 1 point. The score was calculated by summing equally weighted response data on the consumption of 12 food groups: cereal grain staples, roots and tubers, vegetables, fruits, meat, eggs, fish, pulse and nuts, dairy products, oils and fats, sugar, and condiments.

The economic ability of a household influences its access to a wide range of food items. An increase in dietary diversity is associated with improved socio-economic status (Hatloy et

al., 2000; Hoddinot & Yohannes, 2002; Ruel, 2002). A more diversified diet is associated with a number of improved health and nutritional outcomes thus making HDDS a robust indicator to assess the income effects of remittances in household food security (Hoddinot, 1999; Thorne-Lyman et al., 2010). This method, however, does not capture the corresponding weighting of each food group or items, meaning that all food groups are equally weighted, regardless of their caloric or nutritional value. MHs had a more diversified diet compared with NMHs. Nearly 60.84% of MHs consumed more than six food groups, compared with 48.64 % of NMHs (Figure 3.8).

Figure 3-8 HDDS for MHs and NMHs



3.5.8 Remittances and Food-related Shocks

The Coping Strategies Index (CSI), a quick and simple index, was used to assess how households adapt to food-related shocks and food shortages (Maxwell & Caldwell, 2008). The interviewee, in some cases the person with primary responsibility for preparing and serving meals, was asked a series of questions on coping strategies for food-related uncertainties. Based on the responses, a score was generated on a weighted sum of different coping strategies where the weighting reflected the frequency of use by each member of the household. This means that, the higher the CSI value, the more insecure the household is. Four general categories of coping strategies were measured in the survey: dietary change (e.g., eating less nutritious and less expensive foods); increasing short-term food access (e.g., borrowing food, receiving gifts of food, obtaining food on credit); decreasing the number of people to feed (e.g., through migration); and rationing food (e.g., skipping meals or reducing the amount of

food consumed per meal). For the MHs, the mean CSI score was 6.6, compared with 11 for NMHs. The result shows that MHs face comparatively fewer shocks related to food insecurity than those of NMHs. Although remittances are transitory income, these resources act as a cushion against income shocks to the households. Remittance-receiving households are likely to adopt fewer coping strategies to stabilize their consumption. MHs might be able to alter the risk profile of the household by utilizing remittances, which largely influences the state of their food security. The study also found that procuring food and other groceries on credit from a local store is a widely used food provisioning system in the surveyed region. This system works through an informal contract between the store and consumers in rural settings; remittance-receiving households are less dependent on this coping strategy.

3.6 Conclusion

The influence of remittances on household food security is a relatively under-investigated area of research. As remittances are mostly used for basic livelihoods, their impact on development is a topic of some debate. Although remittances are primarily used for food provisioning for households, households also consume remittances for ‘merit goods,’ such as education and health care, and housing provisions. Thus, these remittance spending patterns increase the efficiency of investment and remittance transfer and form a strategy that helps to mitigate production constraints in imperfect market environments by securing and smoothing the recipients’ consumption. As remittances constitute a substantial portion of many households’ incomes, they may help to raise and improve a household’s ability to sustain economic access to sufficient, safe, and nutritious food to meet their dietary and nutritional diversity needs. Without remittances, the total amount being spent on food might drop significantly, which would result in greater food-related insecurity. The study also showed that remittances

influence household purchasing power and smooth the acquisition and consumption of more diversified food and improved nutrition. This study has its own limitations. The relatively small sample size may limit the ability to use these findings in larger policy decisions. Although some of the widely used and scientifically validated food security measurement tools were used for the study, these indices also have their own limitations. Collection of food security related information used in this case is entirely dependent on 'recall'. As a result, therefore, these tools may suffer from 'shortfall-in-memory' bias. The food security related behaviour and experience of the MHs in circular migration to and from the Arab Gulf might not be similar to food security experiences in other migration circuits, such as that of skilled migration to the OECD countries. Moreover, the food security experience of the MHs in the rural context, who also are subsistence producers, clearly differs from the food security experience of the MHs in urban regions. Despite these limitations, the study has shed light on the association between migration and household food security.

Chapter 4 Do International Remittances Matter to Improve Households Food Security? An Econometric Analysis

4.1 Introduction

This chapter analyses the impact of remittances on household food security using econometric modeling. A customised household survey was used to gather data, and a Two Stage Least Square Instrumental Variable Method (2SLS-IV) and Generalised Method of Moments (GMM) were used to regress food security measurement indicators with remittances and household socio-economic and demographic variables. Results obtained from regression models indicate that remittances significantly influence household food security conditions and therefore represent a critical component of household food security. In general, remittances are positively correlated with household food-related consumption expenditures. The results also indicate that the presence of remittances reduces food-related uncertainties and provides a coping strategy for the household to counterbalance food-related shocks. Moreover, the use of remittances improves dietary diversity, enhances the quality of diet and provides adequate micronutrient intake in remittance receiving households. Overall, it seems that the emigration of a household member and the consequent remittance flows increase the probability of a household being food secure.

Empirical evidence suggests that households use remittances mostly on food provisioning, housing, sanitation, healthcare, and schooling. Consequently, these resources help to improve the living conditions of the migrant's household. While the transfer of money from the migrant

back to the household improves the overall food provisioning system, the relationship between migration and food security is complex. When the households receive remittances they become the part of the household budget. Yet, it is not clear whether remittances influence the household food-related spending differently than other income sources. Remittances are often viewed as ‘fungible’ and are spent like income from other sources. The notion behind this argument is that a dollar of remittance income is treated by the household just like a dollar of wage income (Adams & Cuecuecha, 2010, Castaldo & Reilly, 2007, Zarate-Hoyos, 2004, Randazzo & Piracha, 2014). On the other hand, some research shows that remittances are treated as transitory income and are targeted and attached to specific types of expenditure, which may have a different impact than other regular income (De & Ratha, 2012; McKenzie & Sasin, 2007).

Use of remittances in food provisioning might be different from regular income sources. It is not clear whether resources from remittances and other sources of income influences household’s food security situation differently. Econometric models provide an opportunity to estimate the relationship between remittances and food security by including remittance income, other sources of income and household’s social, economic and demographic variables. Despite its importance in disentangling the impact of remittances on food security, endogeneity problems and paucity of survey data complicate econometric analysis on food security measurement tools. It is difficult to create and construct scientifically valid and widely used food security indicators from large-scale nationally representative survey data. A customised survey with adequate information on food security indicators and matrices is one option to overcome this limitation. This study adopts that option to assess the impact of remittances on household food security.

The chapter is structured as follows. Following this introduction, section 4.2 contains a description of methodological complications in remittance related research and potential challenges and solutions found in the literature on the quantitative analysis of remittances. Descriptive statistics, empirical strategy, variable selection, and steps in the specification test are explained in the sections 4.3 through 4.5. Section 4.6 reports the findings while section 4.7 concludes.

4.2 Methodological Complications in Remittance Related Research

To establish a causal relationship between remittances and food security indicators, one of the viable options is to use econometric modelling. However, the ‘endogeneity’ problem is one of the major challenges in establishing valid causal relationships between variables, in this case, remittances and food security. A model suffers from the ‘endogeneity’ problem if there is a correlation between the variable and the error term. ‘Simultaneity’, ‘omitted variables’ and ‘reverse causation’ are some of the common reasons behind endogeneity (Aggarwal et al. 2006, Kennedy 2008, Adams, 2011). If a model is specified incorrectly without including one or more important causal factors and variables, ‘omitted variable’ bias occurs. These ‘omitted variables’ may lead to inconsistent and biased estimation. Moreover, while remittances can reduce the level of food insecurity, household food insecurity related to income shocks can also influence remittances. If this ‘reverse causation’ is not considered and appropriately addressed in the model, it can also lead to biased and inconsistent estimates. ‘Simultaneity’ occurs when in a system of equation Ordinary least Square (OLS) procedures estimate each equation separately and do not consider that the equations are part of a larger system. Endogeneity, therefore, limits the validity of the results of any empirical study on remittances. If the endogeneity problem is not controlled appropriately, it cannot be confirmed that the

estimated coefficients are capturing the real effect of a variable. Most of the early empirical research on remittances ignored the ‘endogeneity’ problem while recent studies have begun to address this problem by employing different methodological approaches. The instrumental variable technique is one of the simplest and the widely used methods in remittance research. It is often challenging to find variables that satisfy the requirements of an instrumental variable. The instrument must meet two important criteria: (i) it should be correlated with the endogenous variable and (ii) it should be uncorrelated with the error term in the regression.

Although the instrumental variable (IV) method is one of the widely used approaches to address the endogeneity problem, there are some disadvantages of the IV technique. This issue has received considerable attention in the recent literature. It is argued that the ‘cure can be worse than the disease,’ that is, IV estimators can be worse than the ordinary least square (OLS) estimators if the instruments are inappropriate (Bound et al, 1995, 1996; Maddala 2002). It is argued that there are two problems associated with this issue. First, if the correlation between the IV and the endogenous explanatory variable is low, then even if the IV is weakly correlated with the error term, there can be large inconsistencies in the IV estimators. Second, in finite samples the IV estimators are biased in the same direction as the OLS estimators (Buse 1992; Maddala 2002). Ordinary Least Square (OLS) is a more efficient and preferable estimator if the estimated results from OLS and 2SLS-IV methods are not significantly different.

The primary data used in this chapter comes from a customised household survey conducted in 4 villages in the south-eastern region of Bangladesh. The Expanded Program on Immunization (EPI) Cluster sampling approach developed by World Health Organisation cluster sampling technique was modified for sample selection and household data collection. Five villages were randomly chosen from each selected local government area, for a total of 754 household surveys. This data was gathered across two field work visits in 2014 and 2015. Surveys were carried out with the household head regarding food preparation and food provisioning in the household. A standardised retrospective questionnaire was used to collect information on migration and remittances, information on household food consumption patterns and food consumption expenditure, food- related shocks, and uncertainties, economic access to food, dietary diversity. Food security indicators were constructed from the information provided by the households. The data contain additional information on the socioeconomic and demographic situation of the household. Details of the survey design and sample selection process are described in chapter 3.

4.3 Summary Statistics

Table 4.1 presents summary statistics of variables used in the model. Column 1 and column 2 show the summary statistics of migrant households (MHs) and non-migrant households (NMH) respectively. Average household total net income other than remittances is 8,398.131 BDTK for MHs and 11,916.30 BDTK for the non-migrant households, while mean income from remittances is 6,434.569 BDTK per month. This means that on an average, MH monthly income is higher than the NMH. Average national income as reported in the Household Income and Expenditure Survey (HIES) by the Bangladesh Bureau of Statistics (BBS) was 11,479

BDTK in 2010 (BBS, 2010). The standard deviation of the remittance income and other sources of income shows variability across the sample.

The average household size of MHs and NMH are 6.1 and 6.2, the figure is a bit higher than the national average of 4.5 reported in BHIES in 2010. However, the standard deviation of household size is 2.3 and 1.8 respectively for MHs and NMHs. It also reflects the range of variability across the sample. Comparisons of the descriptive statistics of MHs, NMHs food security indicators such as Household Food Insecurity Access Scale (HFIAS), Household Dietary Diversity Score (HDDS), and Coping Strategies Index (CSI) are shown in table 5.1. It reflects that food security conditions of MHs are better than the food security conditions of NMH. Linear regression shows the relationship between remittances and food security indicators in figure 4.1

Table 4-1 Descriptive Statistics of the Variables

	(1)		(2)	
	Migrant's household		Non-migrant's household	
	Mean	SD	Mean	SD
Dependent Variables				
Per-capita food consumption expenditure	1464.175	606.995	1436.265	664.444
HFIAS	3.968	2.415	5.304	3.294
HDDS	6.380	2.168	5.727	2.032
CIS	6.635	3.727	11.009	8.016
Independent Variables				
Gender (HoH)	0.422	0.316	0.833	0.374
Age (HoH)	45.171	11.825	47.401	10.034
Education (HoH)	4.280	3.868	3.286	4.107
Household size	6.2	2.3	6.2	1.8
Dependency ratio	72.883	73.926	67.440	57.024
Remittance	6788.973	3339.730	0.000	0.000
Other income	8398.131	5808.857	11916.30	4241.290
Farm size	0.5330	0.423	0.441	0.373
Location	0.179	0.383	0.163	0.370
Instrumental Variables				
Access to electricity	0.9791	0.143	0.947	0.224
Access to technology	0.992	0.087	0.872	0.335
Distance from remittance source country	4367.336	1109.236	0.000	0.000
Cost of remittance transfer	189.136	142.154	0.000	0.000

Notes: Official exchange rate in April, 2016, 1 US dollar = 78.14 BDTK

SD is standard deviation.

All households (N = 753), Migrants households (N = 527), Non-migrant households (N = 253)

4.4 Empirical Strategy and Model Specification

To investigate the association between remittances and household food security, food security is modelled as a function of remittances and other economic and demographic variables. The model is extended to control the factors that influence household food security. The linear econometric model applied in this study takes the following form:

$$FS = \beta_1 + \beta_2 Rem + \beta_3 Inc + \beta_4 X + \beta_5 Z + \beta_6 loct + \varepsilon \quad (1)$$

Where *FS* is the food security indicator, *Rem* is the total remittances received by the households in a Bangladeshi taka (BDTK). *Inc* is the total income of the household in BDTK other than remittances. *X* is the vector of characteristics of the household head e.g. gender, educational status, age etc., *Z* is the vector of household socio-economic variables, such as household assets, farm size, family size, dependency, *loct* is the climate of the survey area e.g whether the village is located in the flood-prone area or not and ε is a random error term that captures unobserved characteristics. The sign and significance of parameter β in equation (1) specify how a unit change in control variable will influence change in food security status.

Four different food security indicators were used as dependent variables in the model. These are (i) the per capita monthly food consumption expenditure of the household measured in BDTK. The variable is an economic gauge which reflects that households spend adequately on food and dietary intake. Food consumption expenditure is calculated on the basis of money spent on food items, plus the monetary value of foods produced at home or received in kind from outside sources reported by the household. Total food-related consumption expenditure per month was then divided by the number of the household members to calculate per capita food consumption expenditure. (ii) the Households Food Insecurity Access Scale (HFIAS) variable reflects household food security status, specifically food-related behaviours,

experiences, conditions and the severity of food access problems; the score ranges along a scale from 0 (most secure) to 27 (most insecure). (iii) The Dietary Diversity Score (HDDS) is a robust and simple indicator used to assess household access to wide range of food items. HDDS value ranges from 1 to 12 and is helpful to assess the income effects of remittances in household dietary diversity (iv) The Coping Strategies Index (CSP) is used to assess how households adapt to food-related shocks and food shortages.

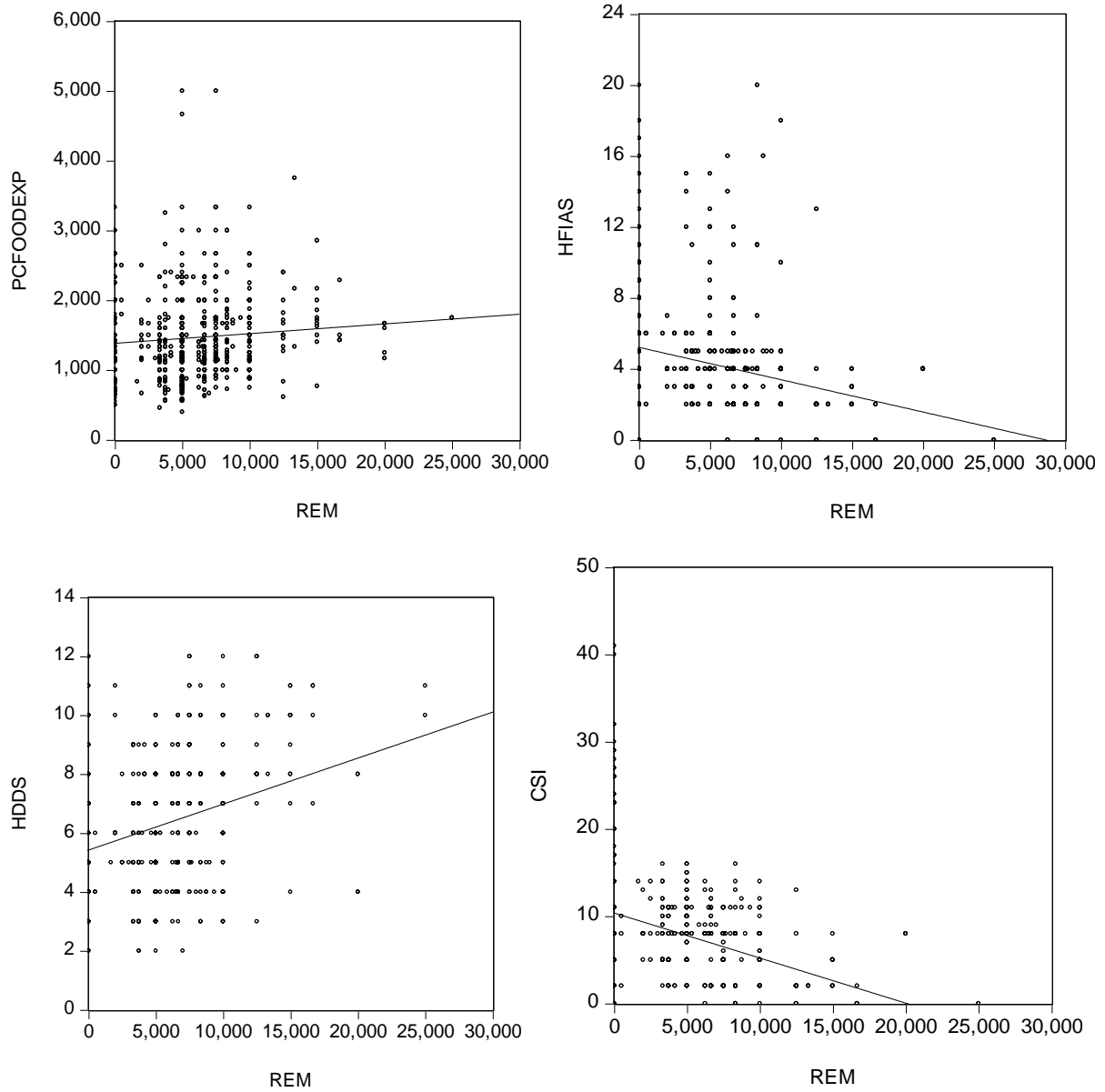
Based upon a review of the existing literature a total of nine control variables were included in the model. The main variable of interest is remittances; included as one of the main covariates measured by the amount of remittances received by the household in the last 12 months prior to the survey and converted into monthly BDTK. A separate variable 'income' was calculated by adding all sources of income reported by the household other than remittances; this includes farm income, non-agricultural wages, income from business, self-employment income and other earnings; this was included as a control variable. The income variable is included to separate the effect of remittances on household food security from other sources of income, and yearly income was converted into monthly income. Farm size is measured as the total farm land in acres owned by the household. Despite the fact that household food security is not entirely a function of what households produce on their farm, it is expected that households that cultivate larger farms are more likely to produce more food and hence are more food secured compared to those who cultivate smaller farms.

The dependency variable is used as a control variable and as an indicator to assess the potential dependency burden.⁷ A household with more children and aged people might spend less on food. Moreover, if there are more children in the household, women are usually responsible for raising children, which in turn limits their engagement in income generating activities compared to households with less children.

The age of the household head is coded in years. Gender is also used as a dichotomous variable in which 1 indicates a male-headed household, 0 otherwise. It is used as a dummy variable to account for the disaggregated analysis and different effects of gender on resource availability and food consumption. Education is coded as years of schooling completed. To assess whether and how climate and location specific agro-ecological conditions influence household food security differently, a dummy variable is included in the model. Code 1 is for flood-prone locations and 0 otherwise.

⁷ Here dependency ratio is calculated using the formula, $\text{Dependency Ratio} = 100 \times (\text{Number of family members (0-14)} + \text{Family members (65+)}) / \text{Family members (15-64)}$.

Figure 4-1 Linear Regression Graph Showing the Relationship between Remittances and Food Security Indicators



4.5 Specifications Test

To estimate the model (1), one of the simplest options was to use Ordinary Least Square (OLS) regression. OLS would imply that all the right-hand side variables are exogenous. However, there are two problems in this case which need to be addressed in the estimation process. First, remittance and other sources of household income may not be distributed randomly among

households. Therefore, the OLS estimation might be biased. Second, there is also a possibility of reverse causation because improved food security can also influence labour productivity and wider access to increased labour force participation, and therefore can influence income. For this loop of causality, OLS estimates are likely to be biased. The model may, therefore, suffer from endogeneity.

Several tests were carried out in order to evaluate the overall specification and robustness of the model (1). The following three specific steps were followed for this. **First**, to check the regressor's endogeneity the Durbin-Wu-Hausman (DWH) test was carried out for each regression. As the difference in J statistics is statistically significant at 0.01 levels, the regressors are not exogenous in the model (1). The test statistics from DWH suggests that either 2SLS-IV or GMM is necessary. Four instruments were used in 2SLS-IV estimation: (i) Distance from Bangladesh to remittance receiving countries, (ii) Remittance transfer costs, (iii) Access to electricity, and (iv) Access to technology (having a mobile phone in the household as an indicator of access to technology). One of the widely used and ideal instruments for remittance is the 'distance' variable. It is measured as the geographical distance between the source country where remittances originate and the remittance receiving country. A large number of studies used distance as an instrument for remittances (Adams & Page 200, 2005, Abdih et al. 2012, Hatton & Williamson 2003). The rationale behind the use of the distance variable is that, on average, the closer a country is to a major source of remittances the more likely it is that workers from that country will send remittances home. Remittance transfer costs, a measure of the cost as a percentage of the amount sent is also used as an instrument; these costs are reported by the World Bank. Access to electricity and possession of a mobile phone (a dummy for access to technology) are also used as instruments for income.

Access to electricity has also been used as an instrument for income in different studies (Babatunde & Qaim, 2010; Ruel *et al.* 1999).

These variables have an impact, both theoretically and conceptually, on the suspected endogenous variable (remittance and income) but do not otherwise affect food security indicators. Identification of the effect of remittances and income on food security will be achieved if these instruments are uncorrelated with the structural error, but correlated with the endogenous regressors (income and remittance). Another challenge is that if the instruments are only weakly related to the endogenous variable, the estimated parameters will be biased toward standard models even if the instruments are not correlated with the error term of the model (1). Moreover, the consistency of the endogeneity test and the coefficient estimates of 2SLS-IV and GMM depend on the validity of the instruments.

Second, to assess whether selected instruments in the model (1) are weak or not and whether the instruments are orthogonal to the error process, two tests were employed. As there are two suspected endogenous variables (remittance and income) in the model (1), relying only on R^2 and F statistics may not be sufficient enough to evaluate the relevance of the instruments. Therefore, the validity of the instruments was tested by an over-identification test.

Third, in the final stage, a weak instrument diagnostic test was carried out to determine whether the instruments are valid or not. The Stock-Yogo test of critical value indicates that there is no weak instrument problem in the model (Stock & Yogo, 2005). Based on the set of diagnostic tests, 2SLS-IV and GMM methods were preferred to OLS and Poisson respectively.

4.6 Findings and Discussion

The key variable of interest in the model is remittances (1). The model is estimated using four food security indicators as dependent variables such as per capita food consumption expenditure, household food insecurity access scale (HFIAS), household dietary diversity score (HDDS), coping strategies index (CSI) and nine different variables as covariates. The findings are discussed in the following sections.

4.6.1 Remittances and Food Security: Per-capita Food Expenditure Approach Model

To assess the impact of remittances at the household level, household's per-capita food consumption expenditure is regressed with monthly remittances received, monthly income received from other sources and socio-economic and demographic variables. Both Ordinary least square (OLS) and Two Stage Least Square Instrumental Variable (2SLS-IV) methods were used for the estimation and the results are reported in table 4.2. It seems that the estimated results of 2SLS are different from estimated results of OLS.

To evaluate the orthogonality condition of the instruments, the Hansen and Singleton (EHS) Test and weak instrument test were used. The results show that the instruments are not weak in this model. Therefore, 2SLS-IV results are preferable to OLS. In both OLS and 2SLS, all the variables have the theoretically expected sign. The results show that remittances influence the per-capita food consumption expenditure significantly at 0.01 level. The coefficient indicates that an increase in monthly remittance by 10,000 BDTK results in an increase in household's per-capita food consumption expenditure by 665 BDTK.

A household's other income sources also influence food consumption expenditures significantly at 0.01 level. The effect of income is slightly higher than remittances. It shows

that an increase in remittances does not increase food consumption expenditure in a similar scale as non-remittance income. The estimated result shows that increases in household income (other than remittances) by 10,000 BDTK relate to household per capita monthly expenditure on food increasing by 1008 BDTK. The result is significant in that it contributes to assessing the difference between remittances and other income effects on household food-related expenditure. It suggests that remittance income influences household food-related expenditure at a lesser magnitude than non-remittance based income.

While some empirical research (such as Adams & Page 2005), suggests remittances are fungible and similar to other income sources, this empirical work shows that remittances are not entirely fungible, and as such their effect on household spending may differ from other incomes sources (see also Yang & Choi, 2007). Although the marginal effect of remittance income and other sources of income are not largely different, the findings support the view that where income originates from does matter. The reason might be that remittances represent a return to the debt-financed migration investment, thus attached to specific types of expenditure. Households might allocate remittance income to productive investments to get a higher return.

Farm size is negatively and significantly correlated with the per capita food consumption expenditure (significant at 0.01 level). The results suggest that per capita food consumption expenditures decline by 233.87 BDTK with an increase in 1-unit (Acre) of farm land. The reason might be a household with larger farm size is able to grow food used to feed the household, which consequently reduces food-related expenditures.

Table 4-2 Household Food Consumption Expenditure Model

	(1) OLS Estimates		(2) 2SLS-IV Estimates	
	Coef	t-statistics	Coef	t-statistics
Constant	2030.940*** (77.18795)	26.31162	1824.620*** (139.1620)	13.11148
Gender (HoH)	92.20193*** (31.84440)	2.895390	16.46736 (46.98639)	0.350471
Age (HoH)	-0.585383 (-0.585383)	-0.405260	-5.412533** (2.630190)	-2.057849
Education (HoH)	3.803343 (3.803343)	0.947127	-19.79830* (10.77147)	-1.838031
Dependency	-0.184565 (0.1851310)	-0.996943	-0.159323 (0.242812)	-0.656158
Household size	-206.4516*** (6.271365)	-32.91973	-204.6019*** (8.224554)	-24.87696
Farm size	-96.48023*** (34.99793)	-2.756741	-233.8787*** (79.69894)	-2.934527
Remittance	0.044423*** (0.003664)	12.12401	0.066514*** (0.014993)	4.436205
Other income	0.051850*** (0.002524)	20.54690	0.108770*** (0.021563)	5.044192
Location	219.9872*** (33.31103)	6.604036	162.3633*** (49.20638)	3.299640
R ²	0.694143		0.483396	
Adjusted R ²	0.690438		0.477138	
F Statistics	187.3598***		84.04300***	
Durbin-Wu-Hausman Test Statistics	24.22596***			

Stock-Yugo critical values (5%), 11.04

Notes: Number of Observations, N=754. Standard error in the parenthesis

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

Gender dimensions in the allocation of household resources are important components of the relationship between remittances and food security. The estimated results show that per capita food consumption expenditure is 16 BDTK higher for male-headed than female headed households. This is probably due to the reason that migrant households are mostly female-headed and they might face challenges in accessing resources such as land and labour in the absence of the male member of the household. Outmigration might have an adverse effect on female-headed household food consumption expenditures. One of the important issues to note here is that while the coefficient of gender variable is significant at 0.01 level in OLS estimation, it is insignificant at 0.05 level in 2SLS-IV model.

One interesting finding is that household size has a significant negative correlation with the per-capita food consumption expenditure variable, meaning that per capita food consumption expenditure decreases in larger households. The result indicates that for each additional family member, household per capita food consumption expenditure decreases by 204 BDTK. The finding is probably due to the fact that larger households enjoy a considerable economy of scale over small sized households, with likely less food waste and possibly the advantage of bulk purchasing. The finding is similar to the empirical literature on economies of scale, household size, and the demand for food-related expenditure, which argues that in households with similar total expenditures, larger families spend less per capita on food (Deaton and Paxson, 1998; Gan & Vernon, 2003; Lazear and Michael, 1980).

Among other demographic variables, the coefficient of the age of the household head is negative and significant at 0.05 level. The result indicates that households headed by younger people spend more on food per person than households with an older head of household. The

dependency variable is also negatively correlated with per-capita food consumption expenditure. Food-related expenditure on children and older people, in general, are lower than on adults. However, the coefficient of dependency and education is not statistically significant.

4.6.2 Impact of Remittances on Household Access to Food Model

To assess the relationship between remittances and the prevalence of household food insecurity, model (1) is estimated using both OLS and 2SLS-IV. The Household Food Insecurity Access Scale (HFIAS) was used in this case as a dependent variable to capture the magnitude of food-related access problems, uncertainty, and insufficiency in food intake. Results of the estimated models are presented in table 4.3.

All the variables in both OLS and 2SLS-IV have the theoretically expected sign except farm size. The estimated results of 2SLS-IV are different from estimated results of OLS. Key variables of interest, such as the remittances and income variable are statistically significant in 2SLS-IV. The Durbin-Wu-Hausman test was conducted to assess the endogeneity of the model. Based on the results an endogeneity problem is diagnosed. To evaluate the orthogonality condition of the instruments, Hansen, and Singleton (EHS) Test and weak instrument test were also used.

The estimated results show that the coefficient of remittance variable is negative and significant at 0.01 level. The result indicates that increases in remittance by 10,000 BDTK is associated with a reduction of HFIAS by 0.05 point scale. The income variable is also negatively and significantly correlated with HFIAS (significant at 0.01 level). The estimated coefficient of income is also 0.05. This means that remittances and income from other sources have a similar impact in reducing household's food-related access problem. The result indicates that remittances do reduce the magnitude of the food access-related problem and

uncertainty. The reason might be that since remittances are a substantial part of household income their presence reduces problems associated with food access and counterbalances the food-related uncertainty moving the household toward sufficient food intake. A household without access to additional resources such as remittances might face substantial risks related to food security, and therefore face a higher degree of food-related uncertainty. Households with access to substantial remittances might manage food-related risk by utilising remittances as a form of informal insurance placing remittance receiving household in a better position in terms of food security.

The coefficient on gender is positive in both OLS and 2SLS suggesting that male headed households are likely to face food insecurity compared to their female counterparts. The result is similar to the other studies using HFIAS as an indicator of food security (Chinnakali et al, 2014). This finding is quite interesting as the per-capita food expenditure model shows female-headed household spend less on food-related expenditure compared to their male-headed counterparts. The finding is probably due to the fact that although women have limited access to resources, they devote more time and effort to make sure all members of the household face less anxiety related to food access problems. Estimated results in OLS are statistically significant at 0.05 level while in 2SLS-IV estimation the coefficient is not statistically significant at 0.05 level.

Table 4-3 Parameter Estimates of Impact of Remittances on Households Food Access Model

	(1)		(2)	
	OLS Estimates		2SLS-IV Estimates	
	Coef	t-statistics	Coef	t-statistics
Constant	9.130541*** (0.526833)	17.33099	11.17455*** (0.954924)	11.70203
Gender (HoH)	0.465258** (0.217348)	2.140611	0.310062 (0.322419)	0.961674
Age (HoH)	-0.036815*** (0.009859)	-3.734157	-0.003271 (0.018048)	-0.181222
Education (HoH)	-0.194904*** (0.027408)	-7.111158	-0.015563 (0.073913)	-0.210551
Dependency	-0.000958 (0.001264)	-0.758331	-0.001786 (0.001666)	-1.072160
Household size	0.001917 (0.042804)	0.044777	0.026460 (0.056437)	0.468850
Farm size	-0.480705** (0.238872)	-2.012392	3.416529*** (0.792899)	4.308909
Remittance	-0.000191*** (2.50E-05)	-7.620183	-0.000526*** (0.000103)	-5.112528
Other income	-0.000153*** (1.72E-05)	-8.888072	-0.0005333*** (0.000148)	-3.601701
Location	0.359356* (0.227359)	1.580566	0.810955** (0.337652)	2.401747
R ²	0.292206		-0.208356	
Adjusted R ²	0.283632		-0.222993	
F Statistics	34.08228***		16.59065***	
Durbin-Wu-Hausman Test Statistics	17.77998***			

Stock-Yugo critical value (5%), 11.04

Notes: Number of Observations, N=754. Standard error in parenthesis

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

Education of the head of household is also negatively correlated with the HFIAS variable. It implies that educated people have access to adequate resources and information and are quite aware of the risk of the food access-related problem. The age of the head of the household and age dependency variables are also negatively correlated with the HFIAS variable. However, 2SLS-IV estimates are statistically insignificant for gender, age and education variables while these are statistically significant at 0.05, and 0.01 and 0.01 level respectively in OLS. The coefficient of the household size is also positive but statistically insignificant for both OLS and 2SLS-IV.

4.6.3 Model on Remittances and Household Dietary Diversity interactions

The impact of remittances on household dietary diversity is assessed by estimating the model (1) with dietary diversity score (HDDS) as the dependent variable. HDDS is the count of food groups consumed during the 7 days prior to the household interview. The variable is calculated by summing equally weighted response data on the consumption of a number of food groups. As the HDDS is count data, there are two suitable options. First, the standard count data model such as Poisson and (ii) Generalised Method of Moments (GMM) techniques that accommodate endogenous regressors.

Although the Poisson model is similar to an ordinary linear regression, there are two exceptions. First, it assumes that the errors follow a Poisson, not normal, distribution. Second, rather than modeling the dependent variable as a linear function of the regression coefficient, it models the natural log of the dependent variable as a linear function of the coefficients (Gardner 1995, Long 1997, Trivedi 1997, Gurmú 1997). However, GMM is preferred for the estimation of the model (1) for at least two reasons. First, there are two suspected endogenous explanatory variables in the model; therefore, GMM is preferable to Poisson regression.

Second, HDDS variable takes only non-negative integer values up to 12 discrete numbers and hypothetically HDDS cannot be zero, therefore, GMM would be a more appropriate option. Existing literature also suggests that in the presence of an endogenous regressor, GMM estimation is preferable in a count data model (Hidayat & Pokhrel, 2009; Mullahy, 1997; Windmeijer & Santos Silva, 1997).

The Household dietary diversity score is regressed using monthly remittances received, monthly income from other sources, socio-economic and demographic variables using GMM. The results from both Poisson and GMM estimators are reported in table 4.4. All the variables have the theoretically expected sign and are statistically significant except the dependency variable. The coefficient of remittance variable is positive and statistically significant at 0.01 level. The estimated coefficient indicates that household dietary diversity score rises by 2.0 scale in response to 10,000 BDTK increase in remittance reception. Household's other income sources also influence dietary diversity positively and significantly. The dietary diversity score rises by 2.8 point scale, in response to 10,000 BDTK increase in household income. The reason might be remittances and other income sources improve the household's economic ability to access a wider range of food items and improve the quality of their diet. The findings are similar to other empirical studies that argue an increase in dietary diversity is associated with improved socio-economic status (Hatloy, Hallund, Diarra, & Oshaug, 2000; Hoddinot & Yohannes, 2002; Ruel, 2002).

The correlation coefficient of the farm size variable is positive and significant at the 0.01 level, and indicates that for each additional unit (acre) of farm land dietary diversity increases by 0.5 scale. This suggests households with more land enhance production and diversity potentially resulting in more diversified and nutritious food.

Table 4-4 Households Dietary Diversity Model

	Poisson		Generalised Method of Moment	
		(1)		(2)
	Coef	Z-statistics	Coef	t-statistics
Constant	1.999809*** (0.535628)	3.733582	1.867501*** (0.539032)	3.464548
Gender (HoH)	-0.221561 (0.224193)	-0.988257	-0.473399*** (0.190651)	-2.483066
Age (HoH)	0.035227*** (0.010325)	3.411916	0.021030*** (0.008153)	2.579495
Education (HoH)	0.148187*** (0.029014)	5.107432	0.090280*** (0.036492)	2.473991
Dependency	0.001448 (0.001347)	1.074973	0.001435 (0.001039)	1.380628
Household size	-0.106207** (0.043740)	-2.428123	-0.088578*** (0.030511)	-2.903172
Farm size	0.888310*** (0.269651)	3.294297	0.555363** (0.266695)	2.082390
Remittance	0.000185*** (2.75E-05)	6.716022	0.000207*** (5.19E-05)	3.996902
Other income	0.000158*** (2.08E-05)	7.582836	0.000281*** (6.56E-05)	4.278211
Location	-0.710280*** (0.226085)	-3.141657	-0.813277*** 0.320428	-2.538093
Pearson Statistics	0.429711***			
R ²			0.320687	
Adjusted R ²			0.312459	
Durbin-Wu-Hausman Test Statistics			10.56181***	

Stock-Yugo critical values (5%), 11.04

Notes: Number of Observations, N=754. Standard error in parenthesis

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

The coefficient of the gender variable is negative and significant at the 0.01 level. It implies that dietary diversity is higher in a female-headed households compared to their male-headed counterparts. Various intra-household bargaining models have convincingly shown that an increase in household income does not necessarily lead to improvements in well-being and food security for all members of the household. Women devote resources under their control more wisely toward improving the quality of diet compared to male counterparts (Quisumbing et al., 1995; Thomas, 1990). The findings of this study are similar to the arguments of the intra-household bargaining models.

Household size variable has also a significant negative correlation with the HDDS (significant at 0.01 level). It means that dietary diversity decreases in larger households. The estimated coefficient indicates that household's dietary diversity score decreases by 0.9 point scale in response to each additional member of the household. The potential reason might be demand for food is less in smaller households and consequently, small households can allocate their available resources to diversify and improve the quality of the diet.

The coefficient of education (number of years in school) and age variable is also positive and significant at 0.01 level. This is probably due to the fact that the more educated and experienced the household members are the more aware the household is about the necessities of diversified diet to ensure micro and macro nutrient intake. The dependency variable is also negatively correlated with the dietary diversity score. However, the coefficient is not statistically significant at 0.05 level.

4.6.4 Remittances and Food-related Coping Strategies During Shocks and Crisis

To assess the impact of remittances in reducing food-related shocks, crisis and coping strategies, model (1) is estimated using OLS and 2SLS-IV techniques with a dependent

variable of the Coping Strategies Index (CSI). Based on the responses, the CSI score was generated on a weighted sum of different coping strategies where the weighting reflected the frequency of use by each member of the household. The results are presented in table 4.5. In 2SLS-IV, all variables, except farm size, have the theoretically expected sign. Some variables also become statistically insignificant in the 2SLS-IV estimation, while they are statistically significant in the OLS estimation. Key variables of interest, remittances and income are highly significant in the 2SLS-IV estimation. The coefficient of remittance variable is negative and significant at 0.01 level, suggesting remittances reduce food related coping strategies significantly. The estimated result indicates that an increase in monthly remittance income by 10,000 BDTK results in average declines of CSI by 11.2. This is probably due to the fact that remittances cushion against income shocks for the household, therefore, receiving households need fewer coping strategies related to food provisioning to stabilise their consumption. The household might also adjust their risk profile by utilizing remittances during food-related crisis and shocks. Remittances help to counterbalance against food-related shocks and reduce the need for coping strategies such as, such as short-term dietary changes, reducing, rationing or altering food consumption, altering the intra-household distribution of food, or reliance on credit for food procurement.

The coefficient of income variable is identical to the remittance variable. The estimated coefficient of income variable shows that a 10,000 BDTK increase in household income reduces the household coping strategies index by 11.2. It implies that both remittances and the household's other income sources reduce food-related anxieties, uncertainties and coping strategies in similar magnitude. The result also suggests that the sources of income, whether it

comes from remittances or other sources, may not important in reducing food-related vulnerability, uncertainty, and shocks.

Table 4-5 Remittances and Households Food-related Coping Strategies Model

	(1)		(2)	
	OLS Estimates		2SLS-IV Estimates	
	Coef	t-statistics	Coef	t-statistics
Constant	17.49220*** (1.049368)	16.66927	22.27242*** (1.986724)	11.21063
Gender (HoH)	0.928376** (0.432924)	2.144433	0.170697 (0.670794)	0.254471
Age (HoH)	-0.079837*** (0.019637)	-4.065574	-0.007614 (0.037549)	-0.202770
Education (HoH)	-0.403281*** (0.054593)	-7.387072	-0.007612 (0.153777)	-0.049503
Dependency	-0.001255 (0.002517)	-0.498665	-0.003444 (0.003466)	-0.993494
Household size	0.168507** (0.085259)	1.976416	0.244594** (0.117417)	2.083131
Farm size	-0.703124 (0.475796)	-1.477785	2.587887** (1.137809)	2.274447
Remittance	-0.000545*** (4.98E-05)	-10.94128	-0.001120*** (0.000214)	-6.448386
Other income	-0.000312*** (3.43E-05)	-9.091823	-0.001120** (0.000308)	-3.638211
Location	0.451152 (0.452863)	0.996222	1.455288** (0.702487)	2.071623
R ²	0.344834	0.071775	-0.220301	
Adjusted R ²	0.336898	0.060532	-0.235083	
F Statistics	43.45155***	25.95619	20.97225***	
Durbin-Wu-Hausman Test Statistics	23.76084***			

Stock-Yugo critical values (5%), 11.04

Notes: Number of Observations, N=754. Standard error in parenthesis

* Significant at the 0.10 level.

** Significant at the 0.05 level.

*** Significant at the 0.01 level.

The coefficient of the household size is positive and significant at 0.05 level, which suggests that larger households need to adopt more coping strategies related to food. The coefficient indicates that for each additional member of the household, the coping strategies index increases by 0.24 scale. It is possible that in larger households demand for food is high and households might adopt some adaptive coping strategies such as rationing consumption among the members of the households, and/or altering the intra-households distribution of food; smaller households might enjoy a considerable advantage over large sized households.

The coefficient of education variable (number of years in school) is negative suggesting that educated households tend to have higher possibility to depend on fewer food-related coping strategies. It is possible that education increases earnings and higher earnings might reduce resource constraints, which eventually helps the household to reduce the need for coping strategies to address insufficient food. The age variable is also negatively correlated with coping strategies. While these two variables are statistically significant in OLS estimation, these are not statistically significant in 2SLS-IV.

The sign of the coefficient of farm size variable is positive in 2SLS-IV although it was expected to be a negative sign theoretically. While in OLS estimation the coefficient of farm size is negative but not statistically significant. However, due to the limitation of the data further exploration of the farm size variable was not possible. The dependency variable is also not statistically significant both in OLS and 2SLS-IV. The coefficient of gender variable is positive. The results indicate that male headed households need to adopt more coping strategies related to food. One possible reason might be female-headed households are mostly migrant households and they are heavily dependent on remittances for their subsistence needs. As remittances are transitory and direct income support, female-headed households counter

balance food-related shocks utilising remittances and adopt fewer coping strategies related to procuring food. Although the gender variable is statistically significant at 0.05 level in OLS estimation, it is not statistically significant at 0.05 level in 2SLS-IV.

4.6.5 Spatial Profile of Household Food Security

A spatial analysis of food security profiles is important to examine in order to determine the influence of location specific agro-climatic conditions as predictors of food security together with other socio-economic household conditions. A region may exhibit agricultural production disadvantages compared to other regions, which may differentially influence household food security conditions. This may be linked to various factors including, access to food markets, farm input markets, production outlets, and the types of shocks or stresses encountered. Households in adverse climatic regions such as in flood-prone areas are likely to be food insecure. Specific agro-climatic condition locations will affect all dimensions of food security including food availability, food accessibility, food utilization, food systems stability, production, and distribution channels. These spatial dimensions of food security have been assessed in this study using a village specific dummy variable.

Agro-climatic conditions and socio-economic features are different across the four surveyed areas. Matlab Upazila is a flood-prone area located in a low-lying deltaic plain intersected by a network of tidal rivers and canals with a sub-tropical climate exhibiting three seasons: monsoon, cool-dry and hot-dry and an average annual rainfall of 2,159mm. The monsoon rainfall starts from June and continues through September and the Tropic of Cancer also passes through the area. Most of the agricultural land of the region is submerged under water during the rainy reason. Although farming is the main occupation, 30 percent of the

families lack arable land in that region (Joshi, 2004; Razzaque and Streatfield, 2001). Given the possibility that agro-climatic condition has a heterogeneous influence on household food security, a dummy variable (1 for the flood-prone areas and 0 for otherwise) is used in the model spatial analysis.

Estimated results of the climate variable in per-capita food consumption model show that the location variable coefficient is positive and significant at 0.01 level. The result indicates that household per-capita food consumption expenditure in flood prone areas is higher by 219.98 BDTK than households in other regions. A possible reason might be food production constraints are common in flood-prone ecosystems. Low yield might constraint the household's ability to secure adequate food from their own farmland, and these constraints may force households to rely on food procurement. Estimated results of the household food insecurity access model in table 4.3 show the coefficient of the location variable is positive and significant at 0.05 level. The coefficient indicates that the HFIAS score is higher by 0.81 point scale for households in the flood-prone areas, implying higher food access problems. Households in the flood-prone areas likely face production and livelihood uncertainties, and more frequent income shocks all of which likely restrict access to sufficient food. The coefficient of the location variable is negative and statistically significant at the 0.01 level in the dietary diversity model (Table 4.4). The estimated coefficient indicates that the dietary diversity score is lower for flood prone area households by is 0.81 point scale.

The coefficient of location variable in the coping strategies model reported in table 4.5 is positive and statistically significant at 0.05 level. The estimated coefficient shows that CSI score is higher by 1.45 point scale for the households living in flood prone area compared to the households living in the other region. It indicates that households in flood-prone areas are

likely to adopt more coping strategies related to food security than the household in the other regions. The reason might be households in the flood-prone areas need to engage in distress coping mechanisms such as borrowing money and selling productive assets in order to access food. From the results of the four estimated models, it seems that the households living in adverse agro-ecological areas face a relatively higher level of food insecurity than the households living in the other regions.

4.7 Conclusions

This chapter is an attempt to understand if, why and to what extent migrant remittances influence household food security conditions. It uses customised household survey data from Bangladesh and robust econometric tools to analyse the association between remittances and household food security. The estimated model of this study shows that remittances favourably influence household food security. Overall, the results indicate that migrant remittances positively influence food consumption expenditure, helps the household to access safe, sufficient and nutritious food, improves dietary diversity, reduces food access problems, and act as a hedge against food-related uncertainty and shocks.

While the study contributes to understanding migration and food security links, it cannot answer questions about some dimensions of the link, such as the role of remittances in reducing structural food security problems. As remittances are transitory income, these resources help to improve economic access to food, reduces household food-related anxieties, and improves dietary quality. However, it is also important to investigate the role of remittances in agricultural asset accumulation, and improving agricultural input investment,

all of which are important to increase productivity and reduce long-term food insecurity. Future research should investigate this aspect with a larger representative samples.

Chapter 5 Geographies of Debt-Financed Migration and Household Resource Backwash: Mapping the Costs and Benefits of International Circular Migration in Bangladesh

5.1 Introduction

This chapter investigates international labour migration financing processes and related resource backwash—or reverse resource flows—which are a critical but overlooked issue in the migration and development debate. Using customised survey data from four villages in Comilla and Chandpur districts, major migrant source regions in Southern Bangladesh, the chapter assesses different dimensions of what is effectively a debt-financed migration strategy or *resource backwash* (resources that flow away from the source region to finance migration) that accompany this process. The findings suggest that although migration has become an essential livelihood strategy for many households in rural Bangladesh, households deplete significant resources in terms of land and other pecuniary assets in order to gain access to migration opportunities in the Gulf and emerging Asian countries. The chapter shows that debt is a critical component of the migration system in Bangladesh, and the findings further suggest that although households adopt a migration strategy to counterbalance income uncertainty, the migration system itself creates extreme precarity, as households become riddled with migration related debt. Tragically it often takes the entire migration episode to service the debt.

Migration is increasingly becoming an important livelihood option for households in the Global South. Theoretical and empirical literature suggest that the decision to migrate comes from the need for livelihood diversification, reduction of income risk and as an attempt

to counterbalance the failures of an imperfect market environment. However, the benefits and welfare gains from migration are shaped by the cost and risk associated with the financing strategy. Complexities, cost, and risk associated with migration financing are enormous. The research and policy debate on migration and development has largely focused on the consequences of migration, such as the impact of remittances, migrant return and utilisation of knowledge and skills, as well as diaspora involvement in development. The discussion on migration strategies and associated costs rarely enter into the discussion, producing an impoverished view of overall welfare gains from international migration. While migration offers a key form of income arbitrage for the resource constraint household, the process itself can make the household more vulnerable by diminishing its resource base. Therefore, migration financing and associated resource backwash must be included in the analysis of the economic consequences of migration and remittances. This chapter focuses on the debt financing dimensions of the international labour migration system in Bangladesh in order to better understand if, why, and to what extent migration acts a debt trap or a wealth creation option.

This chapter proceeds as follows. Section 2 articulates why migration finance variables should be included in the analysis of migration and development. Section 3 includes the summary of the existing literature. Section 4 describes the key findings on cost and strategies of migration, channels used for migration, sources of migration financing and different aspects of the debt-financed migration process, and section 5 concludes.

5.2 Resource Backwash: A Critical Component of the Migration and Development Debate

Remittances, money sent by the migrant worker back to their home country, are the most visible ‘economic footprint’ of international migration, garnering much attention in the migration-development debate. Surprisingly what can be termed the resource backwash associated with migration is largely neglected in this debate. With few exceptions (Buckley, 2012; Rahman, 2015; Stool, 2010), migration financing, the role of debt and assets in funding the migration system are neglected in the empirical literature. However, understanding the resource backwash associated with migration is extremely important for the following reasons:

First, it is clear that migration and remittances can have a positive impact on the welfare of households left behind through increasing incomes, financing education and healthcare, improving food provision, increasing savings and investment. Migration is increasingly becoming temporary and circular with shorter episodic flows. Remittances earned by the migrant worker often cannot fully offset migration costs incurred within the migration event period. Without incorporating the full costs, any assessment of the development impact of migration would be inaccurate, partial and biased. It is therefore extremely important to include the resource backwash variable to a) investigate whether and how remittances received by the household adequately compensate for the loss of assets and resources associated with financing international migration, and b) to begin to map out where resources expended in the migration process actually flow to.

Second, South-South circular migration often entails significant resource outflows from households who deplete their resources, sell pecuniary assets and borrow money at an exorbitant interest rate to finance their trip. This process might, in turn, diminish migrant

household resources, assets, and capacity in a manner that can impede subsequent economic wellbeing and create a damaging migration dependency syndrome.

Third, migration theories such as the New Economics of Labour Migration (NELM) suggests that migration is a household strategy that lessens production and investment constraints through remittances when market environments are imperfect. After the emergence of NELM, many researchers started to regard migration and the provision of remittances as a household strategy used to counterbalance capital and production constraints. However, in the case of South-South migration, which is usually of a shorter duration or offering more precarious employment conditions in the destination region, sending household capital and production resources can be undermined by the debt-induced migration process. Households could accumulate excessive debt beyond their repayment capacity, which can lead to vulnerability rather than loosening production and investment constraints.

Fourth, migration is increasingly viewed as a ‘transnational livelihood strategy’ through which households diversify their livelihood by allocating labour to geographically discrete labour markets (de Haan & Zoomers, 2003, de Haas 2010, Guarnizo, 2003; Thieme, 2008). However, the necessary livelihood conditions are household capacities and assets (Chambers & Conway 1992; Chambers, 1995; Scoones, 1998). Transnational livelihood through migration may not always reap greater opportunities and may actually reduce the capacity of the household if migration entails significant sunk costs and depletion of assets. Any analysis of migration as a transitional livelihood must incorporate migration related costs and assess the degree to which they represent a resource backwash away from the source region.

Fifth, the role of migration in advancing global development has gained traction in mainstream global development policy agendas. While migration was largely absent in the Millennium Development Goals (MDGs), it has been incorporated in the recent global development policy agenda of the Sustainable Development Goals (SDGs). In the SDGs migration is acknowledged as one of the key aspects of development that can promote inclusive and sustainable economic growth and can facilitate full and productive employment and decent work for all (UN, 2015). Migration has been explicitly included in five of the 17 SDG goals and 169 targets. Migration and remittances are the centre-piece of goal 10, which has highlighted different strategies of reducing inequality within and among countries. The target 10.7 articulates the necessities of safe, regular and responsible migration and mobility through the implementation of planned and well-managed migration policies. While target 10.c has highlighted the need to reduce remittance transaction costs to less than 3 percent by 2030. It seems that policy intervention on migration financing is critical to ensure affordable, safe, regular and responsible migration and mobility of people. Therefore, understanding migration financing is important to achieve the targets in SDGs.

Recently scholars have realised the importance of adopting a ‘holistic approach’ to research on migration and remittances regarding the general well-being of recipient households (Brown et al, 2014; Laczko & Appave, 2013; McKenzie & Sasin, 2007). However, the nature of how migration is financed has tended to be overlooked. If migration related resource transfer is conceptualised only as a one-way flow from the migrant destination to the source region, it will produce an inaccurate understanding of the true international resource circulation linked to international migration. This chapter comprehensively charts the resource gains and losses

associated with contract based labour migration systems that connect Bangladesh to Gulf Cooperation Council destinations.

5.3 Existing Literature and Contribution of this Research

The migration finance variable is generally neglected in the debate on migration and development. However, in recent years, migration finance and the related debt-trap have been conceptualised in relation to irregular migration and human trafficking, revealing how it creates an exploitative debt-trap that enhances migrant vulnerability (Davidson, 2013; Zhang & Chin, 2002; Friebel, & Guriev, 2006; Stoll, 2010). However, with few exceptions (Buckley, 2012; Rahman 2015; Walton-Roberts & Rajan, 2013) the migration financing strategy and the role of debt in the migration system is largely unexplored, particularly in South-South migration circuits.

Buckley (2012) examined the migration finance issue and related debt burden in relation to the global financial crisis and its influence on construction workers from the Indian state of Kerala working in Dubai. Using qualitative interviews with a group of construction workers forced to return in Kerala in the wake of the 2008-9 global financial crises, Buckley demonstrated how migration related debt created economic insecurity for the return migrants. Walton-Roberts & Rajan (2013) used a relatively larger dataset in the same geographical context and examined the experiences of nurses who engaged in international migration. Using survey data with 39 return migrants and 181 immigrant households, they examined migration strategies, the magnitude of migration costs, remittance investment and the role of remittances on the marriage process. The study explored the source of funding for training costs, but not migration costs. Nurse's migration costs mostly comprise agent and visa fees, and while these

are significant, the source of migration financing, the actors, agents and the market structure of the borrowing sources were not discussed.

In a recent study Rahman (2015) examined the migration financing strategy and associated economic costs borne by Bangladeshi labour migrants to the Gulf region. Using secondary survey data from the 2009 Bangladesh Household Remittance Survey (BHRS) conducted by International Organization for Migration (IOM), Rahman shows the complex, multilayered debt-financed process of Gulf migration. Households rely on multiple sources to finance their migration process. Although it is one of the more methodologically robust studies among the few focused on migration financing household debt, the study uses secondary data and therefore could not map out the detailed migration strategies, including the magnitude of migration related costs in terms of land sold, the role of formal and informal credit markets, the channels and networks used by the migrants. In contrast, this chapter uses primary and original data to broaden our understanding of debt-financed migration processes in the case of Bangladesh-GCC migration flows.

Two rounds of fieldwork were conducted through March-April 2014 and November 2014-January 2015.⁸ The study sites are four densely populated villages in two districts in the south of Bangladesh characterized by high outmigration. A total of 526 households, with at least one member living abroad, were selected through a modified Expanded Programme on Immunisation (EPI) cluster sampling approach.

⁸ The analysis of this paper is based on a customised household survey conducted by the author with the support of funding from the International Development Research centre (IDRC) Canada. The survey took place with the assistance of Upazila Nirbahi officer, and elected member of the union parishad (UP) in the concerned areas.

The survey included different questionnaire modules on food security measurement indicators, household demographic information, socioeconomic background, asset ownership, demographic information of migrants, pre-migration occupation, migration strategy, networks used for migration, and migration-related costs and sources of migration financing. It also included specific information on income from remittances, their magnitude and pattern of utilisation with reference to food security.

5.4 Findings and Discussion

The following section describes the household livelihood setting and the socio-economic milieu, then it moves into household migration strategies, channels, and circuits used for overseas labour migration. The debt induced migration process, the role of debt and land in migration systems, and the dimensions of resource backwash related to migration are detailed.

5.4.1 Labour Market Geographies of Rural Bangladesh- Gulf Migration Circuits

Like other traditional rural settings, household livelihood in the surveyed areas of Bangladesh straddle three sectors (i) farming (ii) non-farm labour and (iii) migration. Although most of the households are specialised in terms of their livelihood strategies and income generating activities, surveyed households typically maintained a diversity of income sources. One of the advantages households in the surveyed areas enjoy is proximity to urban regions, which broadens the number and range of livelihood options. Daily commuting to the Upazila and district headquarters for work and business was a common phenomenon in the surveyed areas. Physical infrastructure upgrades in the survey region have further improved the

connectivity of villages to urban centres, accelerated the growth of non-farm activities and created a rural-urban continuum. Therefore, the livelihood profile of the surveyed areas is distinct from more remote rural areas in Bangladesh.

Despite the expansion of livelihood activities in the surveyed area, agriculture is still the major source of household earnings. Over a third of heads of household were engaged in agriculture, animal husbandry and fisheries. The survey identified the following categories of professions; agricultural labourer, subsistence farming and sharecropping, small business, vending, employment in construction activities, piecework employment, transport operations, and self-employment in the lower end trades and services. Another third of the household heads reported their occupation as 'housewife' predominantly dependent on international remittances.

The findings are similar to the National data on Income and Expenditure Survey (HIES) conducted by the Bangladesh Bureau of Statistics (BBS). HIES data indicates that agriculture accounted for 30 percent of household income in 2010. According to HIES, income from business, wage and salary also increased. HIES reported that the share of household income from remittances increased from 10.6 percent in 1991-92 to 17.3 percent in 2010, which is the most remarkable increase among all income sectors. HIES data also indicate that income from remittances accelerated economy activities, especially in the transport and other service sectors, and is a critical component in the transformation of the rural economy (BBS, 2010).

Agriculture labour in the surveyed area is segregated along gender lines. Cultural norms restrict women from undertaking work outside the home, which creates a male-dominated agricultural labour market similar to the overall rural agriculture labour market. Even male outmigration from the agriculture sector did not alter the gender-based market

segmentation. Survey results indicate that 36.35 percent of migrants worked in agriculture prior to migration, followed by 32.32 percent unemployed. Other notable pre-migration occupations were transport (10.45 percent) and garment factory work (4.56 percent). Survey results also indicate significant outmigration from the agriculture sector probably due to the fact that subsistence agriculture fails to provide sufficient household income. Institutional mechanisms, public works programmes and social safety nets are mostly inaccessible to the most marginalised, which motivates households to diversify risk through foreign wage labour.

Data on premigration occupation also indicates that a growing number of individuals are employed in, or have no other alternative but, precarious jobs or subsistence agriculture. Low agricultural productivity, economic stagnation in Comilla and Chandpur coupled with the high rate of unemployment apparently made migration a worthwhile economic opportunity for households. Thus, overseas contract work has emerged as an important option for rural households to sustain themselves. Instability and precarious labour markets in rural areas, low productivity in the agriculture sector and strong demand for unskilled labour in the Arab Gulf that offers relatively higher wages becomes a dominant force driving international labour migration.

5.4.2 Intermediaries in Labour Migration System

Migrant members of the surveyed households were overwhelmingly male (98.67 percent). Male dominant migration may be due to restrictive policies and conservative values of both the sending and receiving governments, as well as socioeconomic and cultural conditions. Gulf (GCC) countries are major Bangladeshi migrant destinations for over 90 per cent of migrants from the surveyed region. Nine per cent of migrants went to Malaysia, Singapore, and other Asian regions. Individual country level data indicate that Saudi Arabia is the main destination for Bangladeshi migrant workers (52 percent) followed by UAE (18 percent). The pattern of migration is mostly short-term employment, characterised by specific job contracts and circularity.

The survey found that to get access to overseas labour markets households use three channels (i) recruiting agencies and intermediaries (official and informal) (ii) family and kin networks (iii) friends, neighbours and others. Table 5.1 shows the networks and channels used by households to access international labour markets. The survey indicates that migrants were mostly recruited by agencies and intermediaries; in more than 90 percent of cases in migration to UAE and Qatar, over than three quarters in Kuwait, 67.65 percent in Bahrain, 62.18 percent in Saudi Arabia and 63.64 percent in Oman. More than a quarter migrated through family members and kin to Bahrain, Saudi Arabia, and Oman. For Malaysia, the overwhelming majority (90.91 percent) reported migrating through recruiting agencies, while 4.55 percent migrated using the channels of family and kin and the remainder used other channels. More than 81 percent accessed the Singapore labour market through recruiting agencies.

The survey data shows a clear dominance of recruiting agencies in facilitating migration from Bangladesh to labour markets in the Gulf and other destinations. The formal

recruiting agencies typically match individuals with jobs and employers in the destination countries, secure employment visas, plane tickets, and other necessary migration documents, and tie them to specific employers and occupations in the Gulf. Over the years, the number of recruiting agencies in Bangladesh has increased significantly 55 in 1977 to 300 in 1980 to 956 in 2016 (Massey, 1999; BMET, 2016). On the other hand, the number of unregulated and unregistered recruiting agencies and intermediaries far outnumber the registered recruiting agencies in Bangladesh.

This survey found three types of recruiting agencies and intermediaries (i) large, formal sector, accredited private recruitment firms (ii) government-linked services and (iii) small-scale informal intermediaries and local agents. One of the important shifts in the labour migration system in Bangladesh is the emergence of public sector migration services. The state is very active and assertive in promoting out-migration and has established a variety of institutions, agencies and even financial institutions to promote labour migration. Interestingly the Bangladeshi Government often acts as a labour broker in Government to Government (G2G) models of labour migration. Recently Malaysia, as well as other GCC countries, signed a memorandum of Understanding (MoU) to import labour from Bangladesh (Lomborg, 2016). Although this type of brokered labour mobility is becoming popular, government facilitated migration was virtually absent in Comilla and Chandpur, the study's survey area. One reason for this might be the presence of private recruiting agencies. Indeed, in some areas, local private agents offer the only option for those seeking employment overseas.

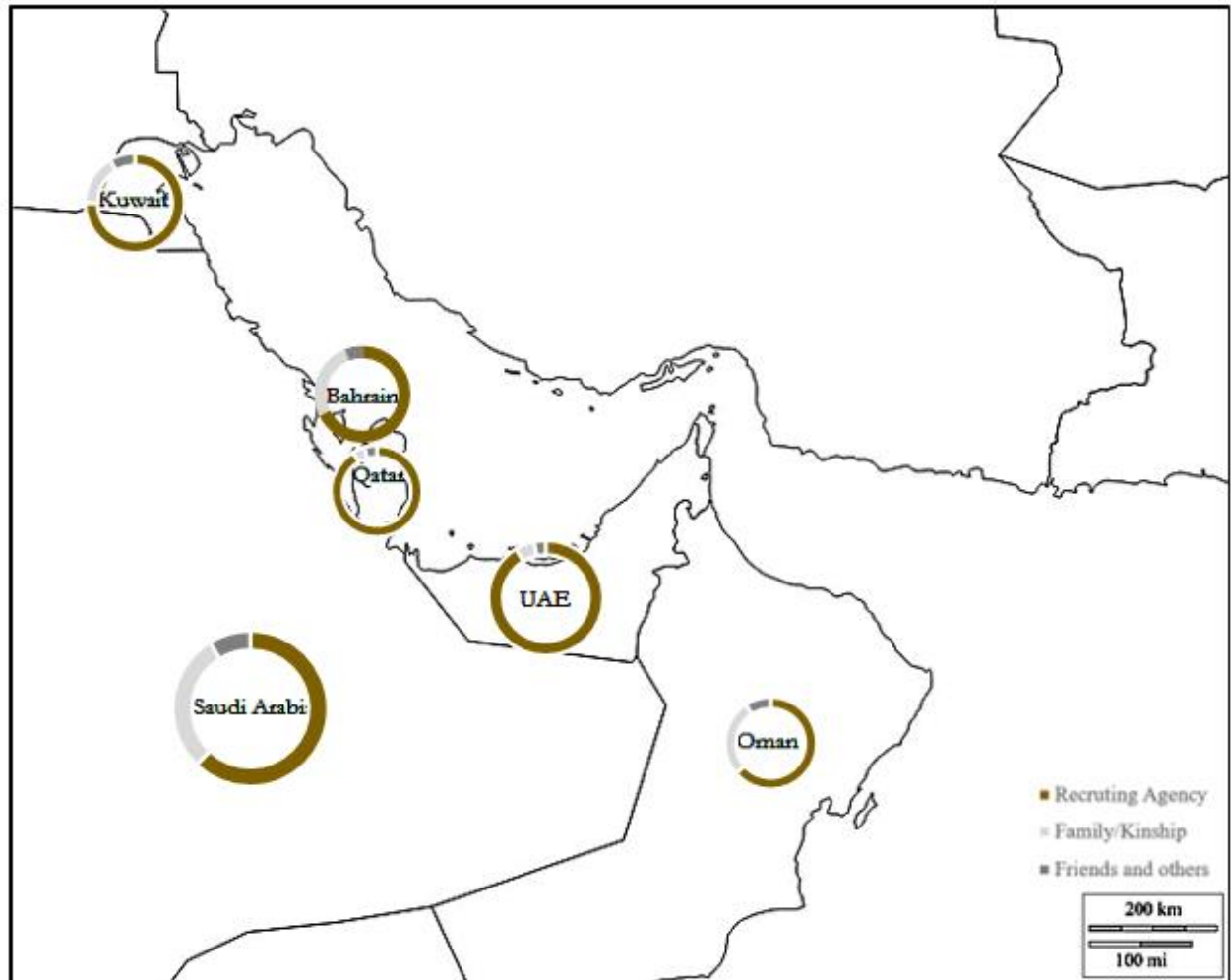
Table 5-1 Channels of Emigration (based on survey results)

Sl No.	Migration Circuits	Recruiting Agency (I)	Family/Kinship (II)	Friends and others (III)
Gulf				
i.	Bangladesh to Bahrain	67.65%	26.47%	5.88%
ii.	Bangladesh to UAE	91.30%	5.43%	3.26%
iii.	Bangladesh to Saudi Arabia	62.18%	29.09%	8.73%
iv.	Bangladesh to Oman	63.64%	27.27%	9.09%
v.	Bangladesh to Kuwait	75.00%	16.67%	8.33%
vi.	Bangladesh to Qatar	91.30%	4.35%	4.35%
South-East Asia				
i.	Bangladesh to Singapore	81.82%	9.09%	9.09%
ii.	Bangladesh to Malaysia	90.91%	4.55%	4.55%
iii.	Others	2.86%	85.71%	11.43%

Data from the survey indicates that commercial brokers, agents, and subagents are the principal modes of job acquisition in the Gulf. People seeking unskilled and semi-skilled positions secure their jobs in the Gulf through these channels and pay substantial money for short-term job contracts (typically 2-5 years) that dominate the construction, service, factory, plantation and other low skilled occupational sectors. Local agents are so dominant in the migration system that even the visa and job categories are named by the local people after the labour

brokers. The researcher found a number of such examples including *Rakhal Visa*, named after the broker who is Rakhal.⁹

Figure 5-1 Migration circuits and channels used in GCC and East Asian countries



⁹ These are regular work visa issued by the GCC countries and local people use the colloquial name for the visa.



Note: Pie diagram in the map shows channel of migration used by the households. The size of the circle represents the number of migrants.

Source: Author based on household survey data.

5.4.3. Migration Costs

Migration brokers, legal or unregistered informal recruiting agencies, charge high fees.

Migration costs are presented in table 5.2. The estimated figure indicates the substantial

financial cost households bear to finance the migration process. The fees include the brokerage fee paid to the agents, visa costs, the residency permit, and air-tickets. There are other expenses to consider as well, such as medical check-ups, passport fees, internal travel expenses, and preparatory and pre-departure expenses. The survey demonstrates how migration costs differ significantly across destination, type of work visa and the channel of migration used.

Table 5-2 Cost of Migration in Different Circuits

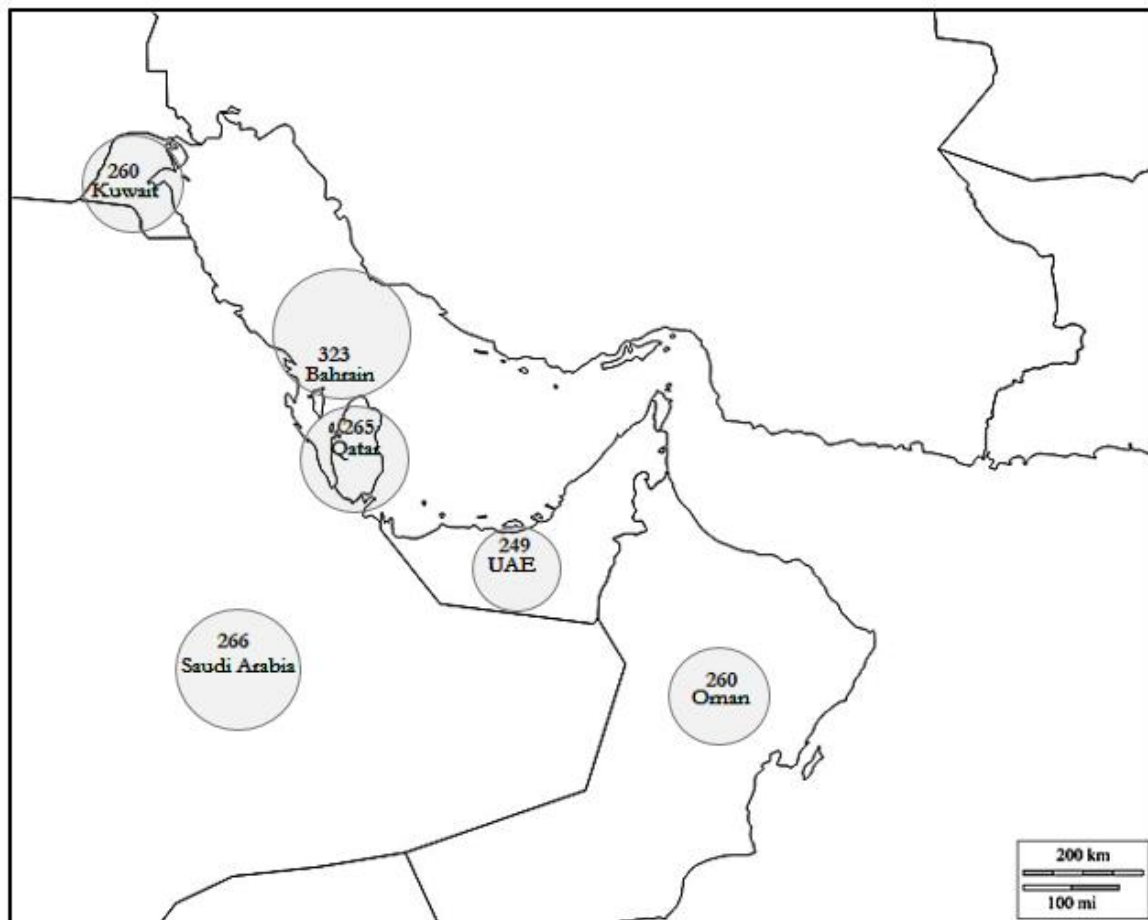
Sl No.	Migration Circuits	Mean	Median	Std. Dev
		(I)	(II)	(III)
Gulf				
i.	Bangladesh to Bahrain	323333.3	350000.0	53238.01
ii.	Bangladesh to UAE	249893.6	250000.0	48637.23
iii.	Bangladesh to Saudi Arabia	266800.0	230000.0	242847.6
iv.	Bangladesh to Oman	260416.7	252500.0	14531.84
v.	Bangladesh to Kuwait	260000.0	250000.0	20000.00
vi.	Bangladesh to Qatar	265208.3	242500.0	105196.3
South-East Asia				
i.	Bangladesh to Singapore	387500.0	390000.0	64965.03
ii.	Bangladesh to Malaysia	233083.3	233500.0	55112.47

Note: Figures in Bangladeshi taka. Official exchange rate in April 2016, 1US\$=78.14

The survey obtained information on the cost of migration by asking the sampled households to report the money they paid for an agent, to purchase a visa, air ticket, medical examination, and passport. The estimated mean cost of overseas migration to Singapore is the highest at 387

thousand BDTK (US\$4,952). On the other hand, to emigrate to Malaysia, another South-Asian country, is the lowest cost of at 233 thousand BDTK (US\$2,981). In the Malaysia case, the Bangladesh Government provides migration services under a G2G model. Government intervention coupled with the nature of the jobs in Malaysia (agriculture and plantation sector work) may influence the cost of labour migration in Malaysia.

Figure 5-2 Cost of Migration



Note: Size of the bubble represents the magnitude of the cost. Figures inside the bubble in thousand BDTK. Official exchange rate in 2016, 1US\$=78.14

Source: Author's data from household survey



Note: Size of the bubble represents the magnitude of the cost. Figures inside the bubble in thousand BDTK. Official exchange rate in 2016, 1US\$=78.14
 Source: Author's data from household survey

The mean cost for migration to Bahrain is 323 thousand BDTK (US\$ 4,133) which is the highest in the Gulf region. The mean cost for other destinations in the GCC is not significantly different. For United Arab Emirates (UAE), Saudi Arabia, Oman, Kuwait, and Qatar mean migration costs are 249 thousand BDTK (US\$ 3,186), 266 thousand BDTK (US\$3,404), 260

thousand BDTK (US\$3,327), 260 thousand BDTK (US\$3,327), 265 thousand BDTK (US\$ 3,391). However, the standard deviation indicates the wide variation in migration costs paid within the same destination.

Since the local supply of labour is much higher than overseas demand, foreign employers or recruiting agencies set the fees, terms, and conditions, which then has the effect of selecting out the candidates able and willing to pay the highest fees. On the other hand, under the G2G model the government selects the candidates through a lottery system. In many cases, friends and relatives working overseas can act as intermediaries and connect the aspiring migrant to the foreign recruiter or employer. The government sets a maximum cost for certain destination countries, but households often pay significantly higher fees than the legal cap likely due to the lack of any effective monitoring and enforcement mechanisms.

5.4.4 Tracking the Circuits of Money related to Migration

Mapping out the entire recruitment and placement process and the role of numerous agencies related to Gulf migration system is one way to get an idea about the circuits, channels and destination of migration related cost. Unfortunately household level data on migration related cost is not sufficient enough to track the entire range of costs related to the different circuits of migration. The labour migration system in Bangladesh involves a multi-layered and transnational system of intermediaries. For GCC migration circuits Gulf-based recruiting agencies or '*Kafeel*' play a key role in the entire process. They initiate the recruitment process by sending a demand for a certain number of migrant workers to their counterpart recruiting agencies in Bangladesh. The recruiting agencies in Bangladesh, which are mostly capital city based, search for the prospective migrant with the help of their local sub-agents in other

regions. They select the potential migrants who are willing and ready to pay the required fee. The recruiting agents then ask the potential migrants to submit their passport, partial visa fee, and other required documents. Once the agents receive the required documents, they forward those documents to the Gulf-based recruiter or '*Kafeel*'. Gulf-based recruiting agencies then process the employment permits and visa documents through the authorities. Once the '*Kafeel*' secures the visa, they send these back to the agents in Bangladesh (Rahman, 2011; Siddiqui, 2016).

Migrant workers often receive an entry visa and residence permit from '*Kafeel*' using their personal contacts with friends and relatives already working overseas and bypass local recruiting agents and subagents. In such cases, they procure the visa directly from the '*Kafeel*'. These recruitment practices are identical for all the GCC countries. Host country based recruiting agencies are in fact the main actors in the Gulf migration model and control the entire recruiting process with the help of their counterpart recruiting agents in Bangladesh. The major cost related to migration is the visa fee (the costs for accessing the ability to apply for the visa not the actual state based administration fee), and Gulf-based recruiting agencies and sponsors receive that fee. While there are some small-scale agencies that operate through personal networks, most of the recruiting agencies are fairly large scale and are involved in visa trading through formal transnational networks (De Bel-Air, 2011, 2014; Shah, 2008; Kakande, 2015). Visa trading has become a profitable business for a certain group of people in operating in the GCC. A work visa is sold in GCC countries for between 2,000 US\$ to 4,000 US\$ with some variabilities depending upon the specific nationality (Shah, 2008).

Permits issued by GCC governments and then sold on the black market have become a profitable industry in the Gulf region (De Bel-Air, 2014; Shah, 2014; Siddique, 2016;

Kakande, 2015). The Saudi Ministry of Labour reports that more than 70 percent of the visas issued by the government are sold on the black market (Shah, 2008, 2014). In an estimate Willoughby (2005) shows that 1.7 billion US dollars was extracted from Indian workers entering GCC countries in 1998 for visas, airfares, and commissions. Willoughby argues the figure is more than one billion dollar in other Asian countries. Although Bangladesh based agents and their sub-agents charge a certain level of commission, a major portion of the migration related costs, such as official and unofficial visa fees, airfare (most carriers are from the destination country), and initial settlement funds are effectively financial resources that represent a backwash to the host countries.

5.4.5 Resource Backwash via Migration Costs

One of the important objectives of the survey was to understand how households finance the costly migration process. The findings indicate that liquidity-constrained households depend on multiple sources of finance, rather than just their own savings, to finance migration. Five broad sources of migration financing were evident (i) Borrowing from formal and informal sources (ii) Selling land (iii) Mortgage-backed borrowing (iv) Personal savings and (v) Other sources.

Only 15.97 percent of households reported that they utilised their own savings to cover migration expenses while 54.56 percent of households reported they borrowed money from multiple sources, the costs of which differ significantly. Households mainly borrow from moneylenders in a bilateral agreement often without a notary or any paper trail. Despite the exorbitant interest rates linked to these systems, households prefer these sources due to their accessibility and flexibility. Households also borrow money from other informal sources such

as family and friends, often with implicit reciprocity.¹⁰ Micro Finance Institutions (MFIs) are one of the few formal options available in rural areas, and some of the MFIs such as Bangladesh Rural Advancement Committee (BRAC), operate a migration loan programme that provides loans ranging from US\$300 to US\$ 3,700, with an initial one month grace period followed by monthly payments for up to two years. Although MFIs and other formal financial institutions offer and deliver migration loan services, most of the households still continue to access funds through moneylenders. Borrowing from commercial banks and financial institutions to cover migration related expenses is quite uncommon in the survey area due to the inflexibility evident in the repayment schedule.

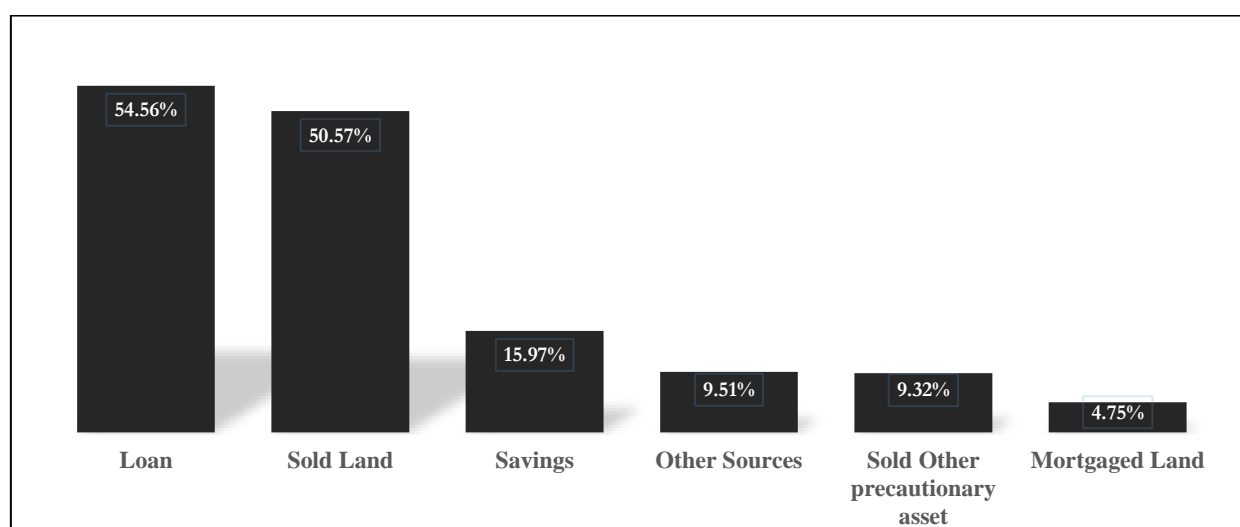
The government also launched “Probashi Kallayan Bank” (PKB) a specialised expatriate Bank in 2011 to provide migration loans up to 84 thousand BDTK (US\$1,100) at the low-interest rate of 9 percent. This bank’s capital comes from the wage earners' welfare fund, which is supported by a mandatory contribution from departing migrants. While every year 500,000 migrants leave the country, the programme has disbursed migration loans to only 5,244 migrants since its inception in 2011, representing less than one half a percent of the annual total number of out migrants (PKB, 2014). Although it seems a good initiative to provide more options in the migration related credit market, limited coverage and excessive bureaucratic control means households generally do not have access to the PKBs loan programme, and in the surveyed villages the programme was virtually absent.

One of the critical findings of this study is that land has become a central component in financing the migration system in Bangladesh. The survey revealed that 50.97 percent

¹⁰ ‘Reciprocity’ is often defined as a social rule by which people give back (reciprocate) the kind of treatment they have received from another. It is also argued that according to the rule of reciprocity, people are often obligated to repay favours, gifts, invitations, etc. in the future (Robert, 2006).

households sold their land to finance migration while another 4.75 percent households mortgaged their land to fund migration. The overwhelming majority (67 percent) of the households could not recover any land that was sold to finance migration, while 33 percent of households reported that they could recover some land by utilising remittances and other resources. One of the reasons for selling land is that households do not want to borrow the money entirely from external sources, therefore, they sell the only significant asset they have—land. A total of 9.32 per cent of households reported that they sold precautionary assets such as jewellery, cattle, and income generating assets in order to finance migration.¹¹

Figure 5-3 Sources of Migration Financing



Note: Percentage will not add to 100 due to multiple responses

The detailed breakdown and comparison of the current landholding and amount of land sold to finance the migration process are shown in Table 5.3. The table shows migration

¹¹ Precautionary savings and assets are resources that protect against risk. Precautionary savings and assets result from the knowledge that the future is uncertain (Carroll and Kimball, 2006).

significantly reshuffles land ownership and land tenure distribution across households. Although the survey did not collect detailed data on actors involved in land trading, two major buyers of land did emerge (i) local elites (ii) successful migrants who have lived overseas for a long period of time.

Table 5-3 Land in Migration System

Size of the Land	Land Ownership		Sold Land to cover Migration cost	
	No.	% of households	No.	% of households
0	32	6.08	250	47.53
0.02- 0.25	108	20.53	174	33.08
0.26 - 0.50	159	30.23	80	15.21
0.51- 0.75	113	21.48	12	2.28
0.76 – 1	42	7.98	0	0.00
More than 1	72	13.69	10	1.90
Total	526	100	526	100

Note: Amount of land reported in Acre (100 decimal=1 Acre and 1 Acre=4046.86 sqm)

Data from the survey reveals at least six critical issues with regard to the nature of migration financing in villages surveyed. **First**, aspiring migrants seeking access to overseas labour markets pay a large sum of money to local labour recruiters or other intermediaries in order to secure employment, work permits, and transportation. As households lack the funds to pay these costs, they borrow from multiple sources. Labour migration from Bangladesh to the Arab Gulf is a debt-financed process. Households deplete their limited resources to finance the complex and costly livelihood strategy. In general, excessive debt accumulation weakens

the economic well-being of households and may result in financial distress. The migrants earn a few hundred dollars in the host countries, and spend a significant portion of their earnings on food, accommodation and other basic amenities.¹² Migrants remit part of their earnings to the households left behind, but this is often not sufficient for households who spend remittances on basic needs. While some of the migrants and the households manage to recoup the funds equivalent to the migration costs quickly, others, particularly poorer and less-skilled migrants, require several years to clear debts.

On average, the cost of migration in the Bangladesh villages surveyed is equivalent to 3.5 years of remittances received by the household. Figure 5.3 shows the mean migration cost and mean annual remittances received by the households. As it was difficult to obtain data on migrants' annual earnings, the standard wage of the unskilled labourers was calculated using secondary sources. In most migrant destination countries related to this research, there is no minimum wage policy. Migrant workers spend most of their earnings on food, accommodation and other amenities and usually send part of their earnings home. Therefore, it takes several years to fully repay the migration related loans utilising income from migrant remittances, and the debt servicing time frame becomes several years longer than most expected. If the migration episode is for a shorter period and the placement is not successful, migration related loans become devastating debts for the household, which negatively affects household well-being. This results in Gulf-based migration systems becoming increasingly complex and costly livelihood strategies.

¹² Some survey on migrants earning in GCC countries show that Bangladeshi migrant workers earn significantly less than migrant workers of other nationalities. For example, using survey data from 1189 migrant workers in Qatar, Gardner et al. (2013) shows the mean earnings of Bangladeshi migrant workers in Qatar is QR 1,050 (US\$400), which is the lowest among different nationalities in GCC.

Figure 5-4 Comparison of Cost and Benefits of International Migration

	100k	200k	300k	400k	Degree of Variability
Bahrain	Equivalent to 4.1 Years Remittance Income			323	53
		78			21
Kuwait	Equivalent to 2.3 Years Remittance Income		260		20
		114			39
Qatar	Equivalent to 3.8 Years Remittance Income		265		105
		70			21
Saudi Arabia	Equivalent to 3.2 Years Remittance Income		266		24
		82			45
UAE	Equivalent to 3.4 Years Remittance Income		249		48
		73			35
Oman	Equivalent to 3.9 Years Remittance Income		260		14
		66			16
Singapore	Equivalent to 4.3 Years Remittance Income			387	64
		60			15
Malaysia	Equivalent to 2.6 Years Remittance Income		233		55
		88			29

Note: dark shade represents the cost of international migration reported by the households (mean cost) while light shade represents the mean remittances received by the households per annum. Far right column indicates the country specific variability of migration cost and remittances received by households. Estimated standard deviation of the variables is used to show the variability. All figures are in thousand BDTK. Exchange rate 1US\$=78.14 in April 2016.

Source: Author's data from household survey

Second, 66 percent of the Bangladesh population live in rural areas (World Bank 2015), and the survey indicates that over three-quarters of households are dependent on land for their survival. Although households are increasingly diversifying their livelihoods, subsistence agriculture and land-based income generating activities are still the major sources of income in surveyed areas. Land is considered a productive asset, a stable source of income and household production is closely tied to these assets. Access to land is crucial not only for the household's own production activities but also as an employer of local rural labour. The

findings from the survey indicate that liquid-constrained households sell and mortgage land to access cash money to finance migration, which in turn reduces the production capacity of the household and restricts the ability to hire labour. Losing land ownership clearly diminishes the ability of the households to engage in subsistence agriculture locally. These might have adverse impacts on the food security conditions of the households. Migrants typically work overseas on a time limited contract and return after the migration episode. Most migrants try to re-establish traditional livelihoods in subsistence agriculture once they return because of their limited resource endowments, limited economic spheres, and limited opportunities to enter into new occupations. Most of the time households cannot recover the land sold for migration due to soaring land prices and insufficient income from remittances, which can set the conditions to expel them from traditional livelihood subsistence agriculture.

Third, migration financing is increasingly becoming a big business in rural areas. The survey revealed that with some variability across destinations, migration costs 280 thousand BDTK (US\$3,600). According to the available estimates around 500,000 Bangladeshi leaves the country every year for overseas employment creating at least \$US 1.8 billion dollars annually in migration costs. Although a set of traditional moneylenders, Microfinance Institutions (MFIs) and in some case some formal state financial institutions are actors in this business, informal moneylenders dominate the field. Bangladesh has a long history of innovation in financial inclusion; the rapid proliferation of MFIs has made formal credit accessible, affordable, and widespread in the rural areas. Increasing numbers of MFIs are penetrating the market of migration related lending, but, these are still unpopular in rural settings and households continue to rely on informal credit and private moneylenders for migration-related borrowing. One of the largest non-government organisations (NGO) in the

world, Bangladesh Rural Advancement Committee (BRAC) is operating in the surveyed area to provide migration loans. However, the survey found the program is not widely used by households to finance migration. BRAC claimed that their “Migration loan programme” reached 64,000 households in 2014 (BRAC, 2015). An interview with the local BRAC programme organizer revealed that borrowers get one month repayment grace period, but immediately after one month after the disbursement of the migration loan the repayment schedule starts. This schedule is inflexible for many migrants since they typically take time to settle and send remittances home. The Microcredit Regulatory Authority (MRA), a government body that oversees the operations of NGOs and MFIs, sets an interest rate cap at 27 percent per year for microcredit, and BRAC’s interest rate is set at the cap, is not significantly different from the private moneylender in the surveyed area. Households reported that they usually pay 30 thousand BDTK to borrow 100 thousand BDTK (approximately 30 percent interest rate).

Fourth, is that generally it is the male members of the household that migrate with significant resources, and consequently households make a number of complex adjustments in their livelihood portfolios. These adjustments often place a burden on the financial health and well-being of the households, especially women. This may interrupt household production. Migrants worker are not permitted to settle with their families and they are not eligible for citizenship to the host countries. Such migration systems have a number of non-pecuniary costs, including psychological, reproductive and opportunity costs which are often difficult to measure.

Fifth, the sustainability of migration as a transnational livelihood strategy is questionable. In the South-South migration system households endeavour to take advantage of

new livelihood opportunities by depending on a range of assets: human, social, financial, natural (e.g land). Reduced access to these assets may dampen the capacity of households to develop sustainable livelihoods. Data from the study also suggests that migration from rural Bangladesh to the Arab Gulf is an extremely risky form of investment for the household when readily available resources to finance migration are not available. It is argued that livelihoods are safer when households have secure ownership of assets, access to resources and income-earning activities to offset risks, cushion against shocks and meet contingencies (Chambers, 1989). Data from this study also shows that households try to negotiate dauntingly complex and costly survival strategies by betting on debt and land. The findings of this study therefore suggest that to consider migration as a transnational livelihood strategy it is extremely important to examine whether migration-related costs and related indebtedness weaken the capacity of the household to secure their traditional livelihood. After analysing the debt-financed migration process as well as relative gain and loss of the households, it seems that households may not take the decision considering the real costs, risks, vulnerabilities, and uncertainties evident in the low-skilled labour migration system.

Sixth, migrants' remittances are not a windfall income; rather these resources are investment returns from debt-financed migration. The findings also contend with the notion that remittances lead to luxurious, wasteful spending; in low skilled circular migration in rural Bangladesh, there is hardly any room for luxury spending since people finance the migration process by incurring debt and depleting significant resources.

5.5 Conclusion

International labour migration to the Arabian Peninsula and East Asia from Bangladesh is both pushed by the lack of adequate livelihood opportunities at home and pulled by the demand for low-skilled labour. It is clear that households diversify their labour portfolio through migration. To diversify the labor portfolio, households send one of the able members of the household overseas by exploiting substantial resources. To fund the migration episode they borrow money paying high interest, sell productive land to secure cash, mortgage out the productive assets and deplete limited savings. The findings of this research suggest that although migration has become essential for many households in rural Bangladesh, they can become overburdened with debt. Tragically it often takes the entire migration episode to service the debt, and if productive assets such as land have been sold the household may be worse off at the end of the migration episode. Overall, the results suggest that migration may not be a profitable endeavour when the process is a heavily debt induced one, and returns from migration do not, or barely, surpass the costs. The sale of land and the depletion of the household's precautionary assets will further diminish the long term economic well-being of the household, creating greater vulnerability. The findings of this research expose the debt-financed nature of migration and contend that South-South migration is not a sustainable livelihood strategy for most households since it often diminishes household assets, which are critical building blocks for sustainable livelihoods.

The following areas for further empirical research are clear. First, debt-financed migration processes must be examined in more detail using a larger representative national survey in order to determine if migration, especially for low-skilled circular migrants, becomes a debt trap, or wealth creation option. Second, research needs to highlight how migration

affects agricultural productivity and local agricultural labour markets. Third, more research could highlight the strategic role of government to reduce migration costs, and to regulate intermediaries. Governments should also consider the fact that migration is not a long term development solution rather migration is a problem of underdevelopment. Therefore, policy efforts aimed at reducing international low-skilled labour migration through local job creation and broadening adequate livelihood opportunities in rural areas should be a priority.

Chapter 6 Governing the Remittance Landscape to Capitalise for Development: Policies and Actors in Bangladesh

6.1 Introduction

Despite a number of economic and financial crises and a series of economic downturns, international migration continues to rise. The transfer of money and goods back home by migrant workers in the form of remittances has a profound influence on many middle- and low-income countries. Despite sluggish economic growth globally, developing countries received USD404 billion in remittances in 2013 (World Bank 2014a). These financial flows are predominantly going to low- and lower-middle-income countries (Table 6.1). There has been much policy debate about global migration governance, such as regulation of recruitment agencies – the intermediaries involved with migration – and regulatory frameworks to combat undocumented migration, migrant exploitation, and trafficking. However, remittance governance issues rarely enter into the discussion, even though remittances are a critical component of the migration and development agenda.

Remittances have reshaped the landscape of global development finance by allowing poorer households to obtain higher living standards, contributing to poverty reduction, and easing foreign exchange constraints without incurring any indebtedness. Therefore, identifying how some forms of remittance governance can contribute to maximizing and sustaining development is an issue of significant policy interest. Remittance governance is currently driven by two issues: the functioning of stringent policies and financial regulations to combat

terrorism financing and money laundering at global level; and policy initiatives to increase the flow of remittances and channel remittances from the informal financial system to the formal banking system (El-Qorchi et al, 2003; Passas and Maimbo 2007; Passas 2006; Lindley 2009). However, this does not adequately capture the full relevance of remittance governance to development issues, since policy intervention, in order to turn remittances into productive investments, hardly enters the remittance governance discussion.

Remittance governance should be conceptualized and understood as a process aimed at ensuring the proper functioning of remittance markets. It should involve designing and implementing policies to create a favourable investment climate, reducing transaction costs, improving financial intermediation, devising investment instruments, promoting financial inclusion, assuring the active involvement of state and non-state actors, the private sector and financial institutions to manage programmes and policies to pursue socio-economic development.

Drawing on the case of Bangladesh, one of the world's top 10 major emigration and remittance receiving countries, this chapter examines remittance governance and demonstrates why policy efforts should focus on how to direct individual and collective remittances toward more productive investment through the promotion of financial inclusion for marginal groups. This chapter will also highlight some of the effective practices currently in place in Bangladesh that can be applied in other developing countries.

Table 6-1 Regional Distribution of Global Remittances

Region	2006	2007	2008	2009	2010	2011	2012	2013
All Developing Countries	235	289	324	303	334	373	403	418
East Asia and the Pacific	58	71	85	79	95	106	107	113
Europe and Central Asia	37	51	45	32	32	38	46	52
Latin America and Caribbean	59	63	64	55	56	59	60	61
Middle-East and North Africa	26	31	36	34	40	43	49	49
South Asia	43	54	72	75	82	97	108	111
Sub-Saharan Africa	13	19	22	28	29	30	32	32
Low-income countries	20	25	22	21	24	28	31	33
Middle-income countries	215	265	302	281	310	345	372	385
High-income countries	76	86	133	115	120	133	130	139
World	317	385	457	418	454	506	533	557

Source: World Bank (2015)

6.2 Why Remittance Governance?

There is a general consensus that remittances can exert a significant positive impact on development if the receiving countries' policies and institutions create the incentives to promote investment (Bobevea 2005; Iskander 2010; Natalia et al., 2009; Giuliano and Ruiz-Arranz 2009). Therefore, targeted policies to turn remittances into productive investment can influence their development potential. Migrants' remitting and investment decisions are influenced by a complex array of factors, such as altruism, return intentions, philanthropic motivation and emotional linkages to home countries. Policy interventions such as sound fiscal policy, liberal exchange rates, and taxation policy can turn remittances into investment even when they are motivated by emotional connections and commitments to the homeland. As migrants are not usually professional investors or entrepreneurs, policy intervention should be innovative enough to provide a wide range of business support services, including adequate

counselling. There are at least five ways remittance governance can leverage these flows for socio-economic development: reduced costs, financial inclusion of the marginalized, mainstreaming remittances into development finance, governing service providers in home and host countries, and policy coherence.

6.2.1 Reduced Costs

Remittances are largely small transactions made by mostly low-income migrants in destination countries. The costs associated with remittance transfers are a burden for migrants and act as a drag on their development potential. The urgency of initiatives to bring down costs is emphasized repeatedly in global forums, such as in the G8 Declarations at the Sea Island summit in 2004, Heiligendamm summit in 2007, Hokkaido and Tokyo summit in 2008, L'Aquila summit in 2009 as well as the G-20 Declaration of Cannes in 2011. Despite these efforts, remittance costs remain high in many remittance corridors, which is a significant problem considering that cutting five percentage points could save more than USD16 billion dollars of migrants' hard-earned income (World Bank 2014b).

In the remittance market, minimal competition, poor technological support for payment and settlement systems, and excessive regulatory and compliance requirements are some of the reasons for high transfer costs (World Bank 2006). The development community has sought reductions in the transfer costs of remittances by promoting technological improvements to increase speed and convenience, and an increase in competitive and efficient markets. Reducing costs by developing financial infrastructure and facilitating more efficient transfer systems appears the most promising area for policy intervention. Other policy initiatives and regulatory reforms that offer promise include licensing liberalization, lowering capital requirements on remittance service providers (RSPs), increasing the participation of

low-cost postal systems and other state-owned distribution alternatives, and allowing grassroot-level microfinance institutions to become involved in payment services (World Bank 2006).

6.2.2 Financial Inclusion of the Marginalized

There is a growing recognition that financial development is an important condition for fostering investment, economic growth and poverty alleviation (Giuliano and Ruiz-Arranz 2009; Levine 1997, Levine et al. 2000). Therefore “financial inclusion” as a strategy for financial development has garnered considerable attention globally. Migrant remittances are often the only financial transactions made by millions of households who have limited access to formal banking services. Research suggests that remittances can contribute to financial development through three channels: first, by increasing “financial literacy” in remittance-receiving communities, thereby promoting households’ demand for and use of financial products, schemes and other services such as housing and consumer loans and insurance; secondly, by increasing the aggregate level of deposits and credit intermediated by banks, increasing the supply of loanable funds to the financial sector and thereby promoting greater financial inclusion; and, thirdly, by increasing funds in the capital market and through stock market capitalization (Aggarwal et al., 2006; Billmeier and Massa 2009; Brown et al. 2013; Giuliano and Ruiz-Arranz 2009; Gupta et al. 2009; Terrazas 2010).

Remittances may foster economic growth through improved financial inclusion, but this cannot be achieved through laissez-faire practices without active policy intervention. The state is the most influential actor in enabling market-friendly institutional environments for financial development (Beck and Honohan 2008; World Bank 2013). Financial inclusion through remittances can be improved through public policies that encourage the expansion of

rural banking networks, allowing domestic origin country banks to operate overseas, and facilitating the provision of remittance services by microfinance institutions and more private sector financial institutions.

6.2.3 Mainstreaming Remittances into Development Finance

Migrant remittances are less volatile and sensitive to fluctuations of the global financial market than other forms of financial flows such as foreign direct investment, public debt and portfolio equity and overseas development assistance. During the last financial crisis, remittances were remarkably resilient compared to the one-third drop in foreign direct investment and the almost total collapse of private portfolio flows (Ratha 2009). Remittances helped many recipient countries to build up solid international reserves, offset trade deficits and reduce current account deficits. The recent surge in remittances, despite the sluggish growth of the global economy, has proved the welfare responsive nature of remittances during periods of economic crisis. Remittances are a shock absorber that serves as a hedge against macroeconomic crisis when development finance becomes volatile and disruptive, harming domestic liquidity, depressing currencies, and complicating national foreign debt burdens.

While remittances have increased, overseas development assistance is declining globally and foreign direct investment is concentrated in countries such as China, Mexico, India, and Brazil. These larger economic powers have some advantages compared to small economies in terms of their access to the market, their natural resource endowments, and vast supplies of low-cost labour. Capital-scarce developing countries, on the other hand, are highly exposed to the volatility of international capital markets. Given the chronic deficit of capital, remittances can be an attractive development strategy for developing countries, compensating for capital market volatility and supporting the receiving country with liquidity without

creating liabilities. As remittances are unrequited transfers, they can substitute for development finance and insulate countries from global market fluctuations (Ebeke and Drabo 2010; Ebeke 2012; Grabel 2009; Kapur and Singer 2006; Shahbaz et al. 2008). While remittances are private transfers, appropriate policy interventions can influence remittance recipients' motivation to utilize them for investment in education, healthcare, and better housing. Innovative partnership schemes with hometown associations can also support infrastructure projects such as health clinics, educational institutions, and wider neighbourhood improvements.

6.2.4 Governing Service Providers in Home and Host Countries

Remittances are earned and saved in one region and spent in another. Therefore, remittance governance is a complex phenomenon that spans borders. Remittance Service providers (or RSPs) collect funds, mostly small amounts from migrants globally, and transfer these to the migrants' home countries with fees. With some national variability, the fees are up to 20 percent of the amount sent. Governance challenges in migrants' host countries where the remittances originate, and in the home countries where the payment system works, are significant. Migrants consider the reliability, cost and convenience of payment systems at the recipients' end as well as the cost of remittance services on their side when making the decision to remit (Hernández-Coss 2005). Financial institutions and markets for remittances operate transnationally while policy initiatives to attract and convert remittances into investments remain mostly national. Policy intervention can shape the market structure in the host country in such a way that migrants can choose from a variety of safe and reliable remittance services. Although remittances are not subject to full control by any one government, states are key actors in formulating and adopting innovative strategies (Iskander 2010).

6.2.5 Policy Coherence

Many developing countries have developed policies to facilitate migration. These policies mostly aim to protect migrant workers by curbing recruitment abuses, regulating recruitment agencies and intermediaries, and setting standards for employment contracts and welfare services for migrants (Kuptsch 2006). In some countries, policies and mechanisms to curb recruitment are relatively advanced, while remittance governance policies are largely under-developed. This indicates the urgency for policies targeted at establishing a more liberalized remittance regime, for setting standards and developing infrastructure, and for designing remittance-linked products and programmes. To fulfil these objectives, prudent remittance policies are required and should be linked with migration policy, broader financial and institutional policies, as well as being embedded within national development strategies.

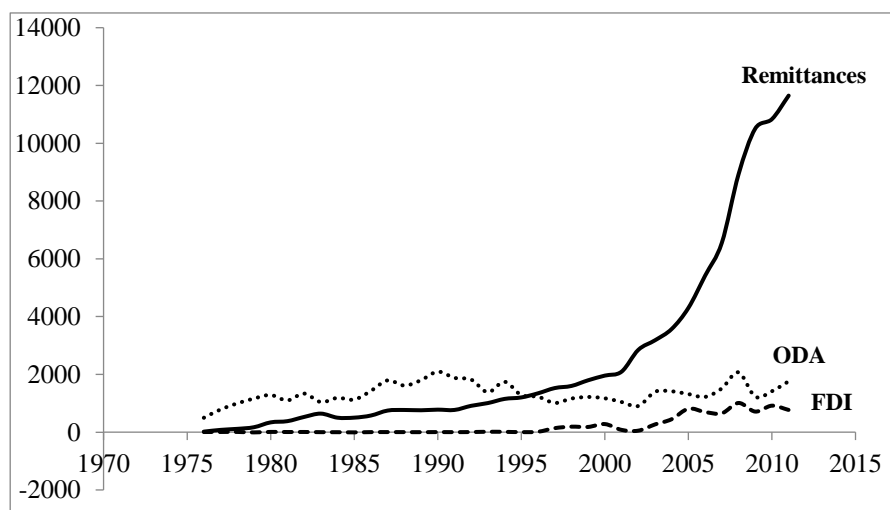
An opportunity and challenge for governments is to create flexible policies that manage migration and remittance services, both of which are complex and dynamic. One policy response to the phenomenon of increasingly large, wealthy and investment-oriented diaspora communities interested in home country development is the implementation of policies aimed at making the financial environment attractive. Such policy initiatives must be part of an effort to promote good economic governance structures more broadly.

6.3 The Remittance Landscape in Bangladesh

Labour market slack is a chronic problem for the Bangladesh economy. Thus, in a crude sense, exporting labour in exchange for overseas remittances has become a key source of foreign currency for the country. Over time, the country's dependence on remittances over aid has increased, which is widely considered a sign of migration's relative importance as a source of development finance (Figure 6. 1). In 1976, Bangladesh received only USD24 million through

official channels. This figure increased to USD13.8 billion in 2013 (World Bank 2013). The share of remittances to Gross Domestic Product (GDP) has also grown significantly, from 1 percent in 1978 to more than 5 percent in 1983, and more than 10 percent in 2013. However, if the unrecorded flows of remittances were considered, the contribution to GDP would be even higher.

Figure 6-1 Flows of Remittances, ODA, and FDI to Bangladesh



Note: In millions of USD at current prices
Source: World Bank (2014b) GOB (2014)

The remittance market in Bangladesh consists of official and unofficial RSPs such as commercial banks, money transfer operators (MTOs), foreign exchange houses, specialized banks, a wide range of commercial agents and financial institutions as well as the regulatory framework governing the remittance products. Like other remittance-receiving countries, state and non-state actors interact to shape the remittance market in Bangladesh. This section of the chapter describes this broader landscape.

6.3.1 Key Players in Remittance Governance

As the core regulatory body for the monetary and financial system, Bangladesh Bank, the central bank of the country, is also the key actor in remittance governance. The bank's foreign currency department supervises the operation of the overall remittances market. It is also engaged in formulating policies, setting guidelines, providing instructions and issuing circulars that require bank and non-bank financial institutions to meet service requirements. Private commercial banks nationalized commercial banks and specialized financial institutions are the major RSPs. The banking sector has the highest (73 percent) share in the remittance market (IOM 2010). A total of 47 banks has a wide network of 7,246 branches operating in the country. Initiatives for financial sector reform in the early 1990s liberalized the banking sector to permit the entry of new private banks and foreign banks, which led to greater competition (Ahamed 2012). The sector has witnessed significant changes over the last two decades in the expansion of retail locations, which has facilitated remittance service provision to more areas (Table 6.2).

Table 6-2 Growth of Financial Institutions Offering Remittance Services, 1975-2013

Banks	1975	1980	1985	1990	1995	2000	2005	2008	2013
Nationalized commercial banks	6 (1,442)	6 (3,375)	4 (3,346)	4 (3,545)	4 (3,611)	4 (3,616)	4 (3,393)	4 (3,386)	4 (3,449)
Specialized banks	2 (155)	2 (426)	2 (944)	3 (1,145)	5 (1,164)	5 (1,185)	5 (1,340)	5 (1,362)	4 (1,417)
Private commercial banks	-	-	8 (632)	10 (827)	13 (1,016)	27 (1,231)	30 (1,638)	30 (2,082)	30 (3,130)
Foreign banks	4 (14)	6 (19)	7 (21)	7 (22)	9 (22)	13 (33)	10 (41)	9 (56)	9 (63)
Specialized banks for migrant welfare	0	0	0	0	0	0	0	0	1 (28)
Total	12 (1,611)	14 (3,820)	21 (4,943)	24 (5,539)	31 (5,813)	49 (6,412)	49 (6,412)	48 (6,886)	47 (8,059)

Note: Number of branches in brackets.

Source: Bangladesh Bank Bulletin reports

The adoption of new technology and banking services of some of the large Micro Finance Institutions (MFIs) has further reduced service delivery costs. These have influenced concentration and competition in the remittance market. Another policy initiative to allow nationalized commercial banks and private commercial banks to establish foreign branches and exchange houses in major migrant destination countries has also shaped the competition and payment system. Moreover, all the commercial private banks, as well as nationalised commercial banks, have made agreements with foreign banks and the Western Union to smooth the transfer of remittances. Commercial banks are increasingly interested in targeting remittance services not only to capture financial flows but also to utilize remittance channels for other financial services. However, despite these changes, the World Bank reports that only 3 percent of accounts are used to receive remittances in Bangladesh (World Bank 2011). This suggests that, although the banking sector has been making changes to enhance remittance

services, it has not been successful in attracting clients for regular products and other banking services.

6.3.2 Money Transfer Operators and Other Informal Channels

MTOs are specialized fund transfer agencies and have established an expansive network of agents, alliances and partnerships with banks in Bangladesh. For accessibility, convenience, network coverage and speed of transfer, Western Union, and MoneyGram are widely used RSPs in the country. Despite relatively high service costs, MTOs are popular in the remittance market globally because, as non-depository institutions, they provide anonymity to the remitter and, unlike formal banking institutions, do not gather significant personal information from the customer. Therefore, remitters often feel more comfortable using these services, especially if their legal status in the destination country is not secure (Hernández-Coss 2005). In Bangladesh, despite the wide network of Western Union and MoneyGram (12,000 and 4,000 branches respectively), their market share is significantly lower than that of the banking sector. Existing data shows that 8 percent of migrants remit money through MTOs (IOM 2010). Two possible reasons might be the low cost of remittance services at other nationalized banks and the extension of the services of the nationalized commercial banks to the migrant's country of settlement.

Despite the wide range of service options in the formal system, informal transfer agents, community-based arrangements (such as transfer through friends and relatives), in-kind remittances, *hawala* and *hundi* are popular outside the regulated financial domain. As in other south Asian countries, the *hundi* system operates in Bangladesh outside the formal banking system with little or no paper trail. Through this process, a payment is made by the migrant in their destination countries and usually within 24 hours the recipients receive the

money in local currency in their home countries through a local agent. These are popular transfer systems outside of the traditional banking system because of lower costs, the potential anonymity of the remitter and receiver, and speed and convenience.

6.3.3 State and Non-state Actors, Public Policy, and Regulatory Frameworks

A number of institutions such as the Ministry of Expatriates' Welfare and Overseas Employment, Bureau of Manpower, Employment and Training (BMET), Ministry of Finance, National Board of Revenue (NBR) are directly and indirectly engaged in remittance governance in Bangladesh. The Bangladesh government established the Ministry of Expatriates' Welfare and Overseas Employment as a separate ministry in 2001. The ministry works for the welfare of migrants overseas. The BMET, a division of the Ministry of Overseas Employment and Expatriate Welfare, develops and designs new policies and procedures to monitor the functions of recruiting agencies. It also works to ensure welfare for overseas employees, assist migrants in securing their pay and compensation from overseas employers, compensates them in the case of death, illness, or other problems encountered overseas. The Ministry of Finance, as well as NBR, plays a role in remittance governance. Bank and Financial Institutions division of Ministry of Finance deals with legal and policy issues related to banks, non-bank financial institutions, capital markets and the microcredit sector. Some other non-state actors and development NGOs are involved with migration and remittance governance through awareness-building campaigns to promote safe migration and remittance transfers, as well as in an advocacy role regarding migrant rights.

Several policy instruments are used to govern remittances in Bangladesh (Table 6. 3). These are regulatory instruments are largely ineffective in channelling remittances towards development. None of the policy instruments articulate specifically the strategies of an

efficient and safe payment system, the utilization of state-owned financial infrastructure to provide the lowest possible price, broad access to payment services, appropriate and innovative investment instruments, and the inclusion of remittance governance issues in development planning.

Table 6-3 Policy Instruments on Remittance Governance in Bangladesh

Year of Enactment	Policy Instrument	Key Components	Gaps
1947 (modified up to 1996)	The Foreign Exchange Regulation Act, 1947	<ul style="list-style-type: none"> • Regulatory instrument to manage all kinds of foreign currency • Regulates dealings in foreign exchange, licensing, code of practice, the import, and export of currency and bullion 	<ul style="list-style-type: none"> • Excessive restriction in buying, selling, conversion, possession of foreign currency by any person other than an authorized dealer • No specific articulation of migrants' remittances • Excessive regulatory and compliance requirement and not a market-based approach • No articulation on remittance market, competition among RSPs) and MTOs, payment and settlement system, and no guidelines to reduce remittance costs
2002	Wage Earners Welfare Fund Policy 2002	<ul style="list-style-type: none"> • Guidelines to establish welfare fund using resources from migrants' subscriptions, levies on licenses of recruiting agencies, surcharges and the fees collected through the missions abroad and personal and institutional contributions • Utilisation of funds for emergency assistance e.g. death and disability, assistance in forced repatriation, contract violation, pre-departure training, and assistance to migrants' families 	<ul style="list-style-type: none"> • More focus on creation of welfare fund, not on the strategies to help remittance-receiving families for income generating activities • Inadequate consideration of gender and groups in vulnerable settings • Falls short in devising strategies to broaden access to the financial system
2006	Commercially Important Person (Non Resident Bangladeshi) Selection Policy 2006	<ul style="list-style-type: none"> • Outlines the special privileges for the migrants who send remittances above ceiling including priority in reserving seats in airlines, public transit, using special lounge and handling facility at the airport, priority in getting facility at government hospitals and invitation to different national programmes 	<ul style="list-style-type: none"> • Excessive focus on privileges, not on creating good investment environment for non-resident entrepreneurs • No guidelines on facilitation to support business creation, leverage remittances in enterprise, creation of public institutions to provide services to CIP investors, favourable interest rates or reduced import duties to channel remittances to productive investment
2006	Foreign Employment Policy 2006	<ul style="list-style-type: none"> • Overall migration management such as exploring overseas labour markets, setting standards for employment contracts and working conditions, wage protection, welfare services, reintegration of return migrants, strengthening institutional capacity and coordination among different public institutions and recruiting agencies • Awareness building through information campaign for productive use of remittances in saving schemes, bonds and instruments 	<ul style="list-style-type: none"> • Emphasizes channelling remittances from informal ways to the banking system, without any clear goals and strategies to create competitive environment among RSPs and reduce service cost informal channels • Entrance and capital requirements for newcomer RSPs, safe payment system etc are not addressed • Does not articulate the necessity for performance evaluation of different investment opportunities, instruments, and bonds

Year of Enactment	Policy Instrument	Key Components	Gaps
2008	Special Privilege for Expatriate Bangladeshi Remitters Policy 2008	<ul style="list-style-type: none"> Privileges for remittance sender above ceiling e.g. education for migrants' children, priority in state-owned housing projects, priority in reserving seats in airlines, public transit, using the special lounge and handling facility at the airport, priority at government hospitals and invitation to different national programmes in foreign mission 	<ul style="list-style-type: none"> Strategies and goals are not specified to create favourable investment climate, expand savings and investment opportunities No strategies to make migrant households' access easier to the financial universe.
2009 (Amended in 2013)	Anti-Terrorism Act 2009, Anti-Terrorism (Amendment) Act 2013.	<ul style="list-style-type: none"> Procedures to detect and prevent terrorist financing, monitoring suspicious domestic and international transactions, recording and reporting transaction, governing financial crimes, penalties for non-compliance 	<ul style="list-style-type: none"> Over-surveillance and reporting requirements can be a barrier for entrance of the newcomer RSPs and hinder the competitive market environment No articulation of strategies for efficient and safe remittance payment system, utilization of state-owned financial infrastructure for payment services to reduce the cost
2012	Money Laundering Prevention Act (MLPA), 2012	<ul style="list-style-type: none"> Transaction surveillance and compliance monitoring, detection of suspicious transactions, investigation, and trial, financial intelligence of central bank, suspicious transaction report 	<ul style="list-style-type: none"> Stringent regulation, compliance requirements are burdensome and can drive out small-scale RSPs. No strategy to design fiscal regimes to encourage new RSPs to enter into the market No guidance to improve the efficiency of remittance market and state-owned distribution alternatives
2013	Overseas Employment and Migration Act 2013.	<ul style="list-style-type: none"> Licensing, controlling and regulating recruitment agencies and employment intermediaries Guidelines for setting standards for employment contracts, working conditions, wage protection, welfare services for migrants, establishment of labour attaché in foreign missions, penalties for non-compliance with license conditions 	<ul style="list-style-type: none"> Extensive focus on curbing abuse of recruiting agencies, not on RSPs and MTOs No measures to foster competition, reduce the cost or provide safe and efficient payment system infrastructure

6.4 Remittance Governance in Bangladesh

In Bangladesh, international migration and remittances have become a critical component of the development agenda. However, as this chapter has argued, there is a dearth of market-based economic policy tools and fiscal mechanisms specifically targeted at remittance governance. Some governance initiatives have achieved success in channelling remittances to the formal banking domain, reducing costs, promoting greater financial inclusion through low-cost mobile banking services, and engaging microfinance institutions and these needs to be highlighted.

6.4.1 Success in Cost Reduction

Remittances are cost sensitive and migrants will choose alternative informal channels when remittance costs are too high in formal channels (Aycinena et al. 2011; Gibson et al. 2005; Freund and Spatafora 2008). Even in the case of “charity” and “collective remittances”, people tend to donate more when the cost of donating declines (Cordes 2001; Bakija et al. 2003; Glenday et al. 1986). More developed financial systems, less volatile exchange rates, liberal fiscal policy, good governance and flexibility in depository requirements are all factors that promote greater competition in the remittance market and lower the cost of remittance services (Freund and Spatafora 2008). The reduction of transfer costs should, therefore, be one of the core objectives of remittance governance.

The presence of low-cost public payment infrastructure, networks of nationalized commercial and private commercial banks, extensive networks of MFIs and their market penetration, the extension of remittance services to the migrant’s host country through domestic bank branches, and special arrangements with foreign banks have helped to foster cheaper, faster and more secure ways to send remittances to Bangladesh. Some of the

remittance corridors in Bangladesh are the least costly in the world. For example, Singapore-Bangladesh is the world's cheapest corridor (World Bank 2014b). State-owned commercial banks have opened overseas branches and remittance counters in major remittance source countries to provide remittance services. Relaxation of the policy framework regulating these activities has had a significant effect on remittance costs in Bangladesh (Table 6.4). To make services convenient and inexpensive, overseas branches of the nationalized commercial banks use phone and ATM-based technologies that do not require the physical presence of the remitter in the branch. For example, Sonali Bank offers this service through their London branch. These initiatives have created competition in the remittance market. While global MTOs such as the Western Union and MoneyGram operate in Bangladesh with their extensive payment networks, their market share is not significant due to their high cost compared to nationalized commercial banks and other financial institutions.

Table 6-4 Comparative Cost of Remittance Transfers to Bangladesh (in USD)

Remittance corridor	Western Union	MoneyGram	Nationalized commercial banks /service counter/ exchange houses
US-Bangladesh	12.00	11.00	5.00
UK-Bangladesh	10.00	16.50	8.00
Canada-Bangladesh	20.00	-	5.00
Saudi Arabia-Bangladesh	6.70	6.00	4.00
Singapore-Bangladesh	4.50	4.50	3.80
Malaysia-Bangladesh	4.00	4.50	3.00
Kuwait-Bangladesh	3.60	3.60	3.00
UAE-Bangladesh	4.08	4.08	4.00

Note: Data collected using online price estimator of the MTOs, by contacting individual agents of banks' exchange houses within each corridor in January 2014. The transfer fee is calculated for the first US\$500.

6.4.2 Bringing Millions from the Unbanked to the Financial World

Migrants generally prefer informal transfer methods to avoid high transaction costs, exchange rate uncertainty and to maintain anonymity in light of their legal status in the host country. In many global remittance corridors, informal transfer systems are more reliable, accessible and convenient. Although, the distinction between formal and informal channels is questionable in terms of eventual impact 'on the ground', the informal remittance transfer system is clearly connected to financial exclusion (De Goede 2003; Pieke et al. 2007). Many countries have adopted a restrictive approach to informal remittance transfer processes including tightening regulatory scrutiny, but this approach fails if it does not also create low-cost alternative options. In Bangladesh, remittance governance initiatives are mostly aimed at channelling

informal flows to the formal banking domain. The country has achieved remarkable success in banking these unbanked remittances. World Bank Global Economic prospects reported 54 percent of remittances in Bangladesh in 2006 were informal (World Bank 2006) but more representative, large-scale remittance household survey data shows that less than 20 percent of remittances come through informal channels (IOM 2010).

The reasons for this achievement include the comprehensive approach of the government of Bangladesh, which does include restrictive policies but also incentive schemes in cost reduction initiatives. Also, the role of micro-finance institutions (MFIs) and community-level development NGOs in achieving social mobilization and awareness-building programmes is important. While these initiatives have been successful in channelling remittances into the formal banking system, there is no evidence this has increased household demand for and use of other financial products and services such as housing and consumer loans, insurance and credit. It is also not clear how success in channelling remittances to formal banking systems influences their wider development impact in terms of extending credit to marginalized groups. Harnessing remittances for savings, investment and capitalization should ideally be the priority of remittance governance but such initiatives are largely absent in Bangladesh.

6.4.3 The Role of MFIs and Development NGOs

Since remittances are private transfers, there is a growing recognition that the active involvement of local level microfinance institutions, development NGOs, business and the government is necessary to harness fully the development potential of remittances (Bobeva 2005). Bangladeshi microcredit institutions and development NGOs have shifted their

activities from social mobilization to more targeted service delivery such as health and sanitation, and informal education. MFIs and community-level development NGOs are becoming increasingly involved in remittance governance in Bangladesh.

While the majority of MFIs still do not offer direct remittance services due to regulatory restrictions, microfinance institutions such as the Bangladesh Rural Advancement Committee (BRAC), which is the world's largest development NGO, is providing remittance services through its sister concern, BRAC Bank. BRAC uses its local offices as payout locations and *probashi* (expatriate) banking has become one of the largest networks for remittance services in Bangladesh. MFIs have some advantages in competing with mainstream service provider banks and MTOs in terms of their extensive geographical presence and payout locations in rural areas. Moreover, they have created a wide range of business opportunities for remittance-receiving households. For example, Probashi Biniyog is a scheme tailored to capitalize on migrants' remittances for investment in the Bangladeshi capital market and stock exchange through a beneficiary owner's account where the bank provides a custodian service to the migrant.

The Remittance Partnership Project is aimed at producing a measurable impact on price, speed, and growth of remittances in Bangladesh. A large number of MFIs and development NGOs are working to turn remittances into investment, and influence the expenditure of remittances in investment goods such as education and healthcare. They are exploiting their extensive community networks for enterprise development, business development services and income-generating activities through their training and development intervention and group-based community approaches to investment. The microcredit regulatory authority of Bangladesh reports that 576 MFIs mobilize savings through their

18,066 branches, mostly in rural areas (MRA 2012). Relaxation of regulatory restrictions could potentially allow these MFIs and their extensive networks to provide direct low-cost remittance services and mobilize savings in underserved areas, thereby fostering deeper financial inclusion.

6.4.4 Diaspora-led Commercial and Specialized Banking

Some recent policy initiatives can be deemed unique for remittance governance in Bangladesh. Probashi Kallyan Bank (PKB) a specialized welfare bank in the public sector, caters for the needs and welfare of migrant workers and engages the migrant diaspora community in development. International migration is a costly venture and a debt-inducing process. Households exploit their limited resources, often sell their land and depend on high-cost loans from traditional banks and MFIs to finance the migration process (IOM 2010). PKB facilitates the migration process by financing migration expenses through low-cost loans and rehabilitation of migrant workers in the event of repatriation. Other financial products and schemes, such as loans designed to finance “productive projects” by return migrants, aim to create employment and spur community development.

Many developing countries now prioritize engagement with their diaspora community to create business and jobs, stimulate innovation and use large-scale remittances for entrepreneurship. However, in most cases little success has been achieved as the approaches and mechanisms do not give diaspora communities direct control over the use of their funds, unlike remittances, bonds and other savings and investment schemes (Ionescu 2006; Lin 2010; Newland and Tanaka 2010). Some diaspora-led investment initiatives could enable the diaspora community to control their investment. The central bank has recently liberalized its

policy to attract non-resident Bangladeshi (NRB) to invest in the banking sector. It has already permitted six NRB banks to bring together successful and entrepreneurial diasporas from around the world. Recently, two NRB banks, with the sponsorship of highly successful Bangladeshi diaspora in mostly North America and Europe, have started their own banking services in Bangladesh. The central bank set a minimum requirement of at least a 50 percent share from non-resident Bangladeshi for such initiatives. This approach has been successful in channelling capital, skills and business experiences from the diaspora community to their home country.

6.4.5 Remittance-linked Financial Services

Bangladesh Bank has designed remittance-linked financial instruments, foreign currency denominated bonds, saving schemes such as non-resident foreign currency accounts, wage earners' development bonds, non-resident investors' *taka* accounts and US dollar premium bonds to attract remittances through formal channels. Incentives such as interest above market rates, tax exemption on the interest and repatriation facilities are offered with these schemes. Remittances are mostly spent on livelihood needs and services such as education and healthcare, which means that households prefer flexible saving schemes with convenient access to interest. At present, savings and investment schemes are considered inconvenient and inflexible in terms of accessibility. Nationalized commercial banks and other private commercial banks try to market these products in migrant host countries through their overseas branches and embassies. However, evaluations have not been done and so there is no robust data on the performance of these bonds and saving schemes. Remittances transferred through official channels are fully exempt from tax. A quota has been allocated for NRBs in

government housing projects and priority is granted in state-owned healthcare services and education facilities. The government also honours NRBs who send remittances to the country above a specified amount.

6.4.6 Mobile Banking and Settlement Services

In terms of cost and efficiency, technological innovations make remittance services cheaper, faster and easier to access. Therefore, technological innovation and related infrastructural development are a priority in remittance governance. Unlike many other developing countries, Bangladesh has made progress in expanding remittance services through mobile banking. It is often argued that the technology required to set up payment infrastructure for remittance services is not expensive. Existing mobile phone encryption technology and networks provide a backbone to extend financial services to the unbanked. However, the legal and regulatory framework are still restrictive in Bangladesh. Only the bank-led model is allowed to provide remittance services. MFIs, notably BRAC and some other commercial banks, have exploited the opportunity of extensive mobile network coverage (110 million phones) to expedite faster remittance delivery across the country. Bangladesh Bank has provided 10 licences to banks to offer the full range of mobile financial services. The bKash service of BRAC Bank and Dutch Bangla Bank serves nearly 5 million mobile accounts and has more than 9,000 agents. State-owned postal services in Bangladesh also have extensive networks including in rural areas and low-cost electronic money transfer services, which have become very successful. Surprisingly this facility is underutilized for international remittance transfer in Bangladesh.

6.5 Conclusion

Bangladesh is at the forefront in developing innovative approaches, mechanisms and practices to engage migrants and the diaspora community in development. Some of these successes can be a rich source of ideas for other remittance-dependent countries. Remittance governance is still heavily invested in surveillance. Remittance management should not be viewed as a matter of controlling informal channels alone but should entail all stages of the process, from transfer mechanisms to investment schemes, and diaspora entrepreneurship. Policies, governance, and knowledge about management mechanisms of global migration have reached a stage of maturity. However, understanding of the dynamics of remittance governance is still inadequate. More research is needed to further our understanding of the complexities of remittance governance as well as to design and evaluate policy interventions.

Chapter 7 Conclusions and Future Research

This thesis has investigated remittances, food security and migration financing at the household level using a multi-methods approach. It also shed light on the related policy landscape in Bangladesh linked to remittances. In doing so, this dissertation has examined the Migration-Development relationship through the connection between migration, remittances, and food security. It took a holistic approach to investigate the links between migration and food security, as well as migration related debt and remittance policy.

The dissertation started by synthesising the theoretical and empirical literature on migration and development and the development consequences of migrants' remittances. While migration has been interpreted as an indicator of underdevelopment, it is increasingly viewed as a factor that can potentially support development. Due to their sheer magnitude, and the ramifications of their circulation for recipient countries, migrant remittances have shifted the debate toward a more positive direction. This analysis demonstrates that research examining the influence of remittances and its relationship to development are largely inconclusive due to the heterogeneity of techniques, data and research contexts employed. There is a general consensus that remittances reduce poverty, improve health and sanitation, improve housing, help to develop financial markets, and protect households from consumption instability during crisis, all of which do support a positive view of the migration- development relationship. As remittances constitute a substantial portion of many receiving households' incomes, they may help increase households' access to sufficient, safe, and nutritious food to meet their dietary and nutritional diversity needs. After reviewing a large number of empirical studies across different geographical contexts, the dissertation shows that migration and food security links and migration financing are still neglected variables in the broader migration and

development debate. It also indicates that despite some recent research exploring the links between remittances on household food security, further research remains necessary.

Therefore, the dissertation investigates the impact of international migrant remittances on household food security using household survey data from two migration-prone districts in Bangladesh. Using different food security indicators and scientifically validated measurement tools, this study shows that (i) migrant households receiving remittances are more food secure than non-receiving households (ii) cash remittances are spent to maintain adequate consumption levels, and therefore improve the ability to acquire a sufficient quality and quantity of food to meet household members' nutritional requirements (iii) remittances help to improve the households access to important nutritional inputs and provides diversity in diet (iv) remittances allow the households to cope with shocks that threaten its food security status. These findings suggest that remittances improve food provisioning systems of recipient households, which may have a positive impact on human development in the long run.

This dissertation uses robust econometric tools to map out and dismantle the role of remittances and other income sources in shaping the household food security condition. The estimators also helped to explore the gender dimension of household food security as well as location specific and spatial profiles of household food security conditions. Two Stage Least Square Instrumental Variable Method (2SLS-IV) and Generalised Method of Moments (GMM) were used to regress food security measurement indicators with remittances and household socio-economic and demographic variables. Results obtained from the regression indicate that remittances influences the household food security conditions significantly and therefore are a critical component of the households' food security. In general, remittances are positively correlated with household food-related consumption expenditure. The results also

indicate that remittances can reduce food-related uncertainties and help households to counterbalance food-related shocks. Overall, it seems that the emigration of a household member and the subsequent remittance input increases the probability of a household being food secured.

The findings of the dissertation further suggest that although temporary and circular migration to the Gulf and other Asian countries has become a part of livelihood strategy for the households in rural Bangladesh, households deploy significant resources to finance the migration process. The benefits of international remittances are undermined by the fact that migration itself is a debt-driven process. International labour migration is financed in a manner that suggests that the eventual benefits from migration (remittances) are part of a circuit of resource flows where a significant proportion are actually backwashed—or reverse their flow—back to the host states. This issue of the resource distribution across the migration system and along the continuum of the migration event is a critical but overlooked factor relevant to the larger migration and development debate. The findings of this research suggest that although migration has become an essential livelihood strategy for households in rural Bangladesh, they deplete significant resources in terms of land and other pecuniary assets in order to gain access to migration opportunities in the Gulf and emerging Asian countries. This dissertation shows that debt is a critical component of the migration system in Bangladesh, and the findings further suggest that although households adopt a migration strategy to counterbalance income uncertainty, the migration system itself creates extreme precarity as households become riddled with migration related debt. Tragically it often takes the entire migration episode to service the debt. Migration itself may undermine development due to the fact that temporary circular migration between Bangladesh and the GCC (the most dominant

form of migration currently active) seems to be a debt-financed process that may foreshadow longer term economic decline for some households.

Finally, this dissertation argues that one way to enhance the development potential of migration is to improve macro level governance of remittances so that costs are reduced, and funds are transferred more effectively into development capital. Bangladesh has shown itself engaged in this kind of macro policy innovation. It indicates that while globally there has been much talk and policy debate about different dimensions of migration governance, such as the regulation of private recruitment agencies and intermediaries and the regulation of criminal activities and exploitation linked to migrant trafficking, remittance governance rarely enters into the discussion, even though it is a critical component of migration and development. Drawing on Bangladesh chapter six offered an overview of remittance governance in terms of enhancing state diasporic engagement to promote social and economic development. It highlights remittance infrastructure, public and private agents and institutions, microfinance institutions in the remittance market, and legal and regulatory frameworks relevant to remittance governance. It also demonstrated that remittance governance in Bangladesh is largely focused on shifting remittances away from informal channels to the formal banking system. To strengthen diaspora engagement in development policy efforts, it is seen as necessary to direct individual and collective remittances toward productive investment and to use remittances to promote financial inclusion for marginal groups. It also highlights some of the successes of remittance governance in the Bangladesh case, examples that may be adapted for other remittance receiving countries.

While the interrelationship between migration and development processes are complex, the case of Bangladesh suggests evidence of migration improving some aspects of

development (food security), but remittances and wider financial policies must continue to focus on enhancing appropriate credit policies that both maximise the value of remittances and address access to and costs of credit. These interventions are clearly needed to facilitate more sustainable migration in order to prevent its debt induced dimensions undermining the positive development potential of the process. These issues are articulated in migration related targets in the SDGs, which explicitly address how to boost the development potential of migration, through policy intervention in order to reduce remittance costs and increase the positive investment potential of this form of capital.

Despite the fact that migrant remittances are unlikely to rescue developing countries from the chronic problems of under-development, these welfare responsive private transfers do feed family members left behind, help build homes, provide investment for small businesses and thus enable household survival and potentially an improvement. Labour market slack is considered to be a chronic problem in most developing countries and as a result, migration and consequent remittance flows are expected to rise in the coming years. Remittances have outpaced all other capital flows in many developing countries, driving growing interest in the development role of remittances. Without remittances, receiving households' total expenditures on food likely would decrease significantly.

While this research can inform analysis of migration and development in settings with similar conditions related to South-South migration, there are some shortcomings evident.

One, considering the available time and financial constraints, the study uses EPI cluster sampling approach. This method was modified, however, to provide some probability footing, for example, each of the villages was divided into four segments and data were collected from each of the segments using 'random walk' approach method. Data were collected from

geographically contiguous households and may share similar characteristics. Although data were collected using the random walk process, sometimes referral to nearby migrant households was necessary to identify the location of migrant households. It is possible that referral processes can create some bias. It is also challenging to calculate the probability of sample selection through EPI cluster sampling method.

Two, the relatively small sample size is another limitation of this research. It is possible that this customised survey may be underpowered for its relatively small sample size and homogeneity of the sample. The customised survey was conducted in the southern region of Bangladesh. Migration and remittance strategies, food security conditions of migrant households involved in other migration circuits, such as migration to the global North, may be different. Moreover, food security experiences of urban households likely differ from those of rural households. Therefore, findings may not representative of wider national trends.

Three, the study collected data from the households through a retrospective survey. Therefore, it is possible that it may not be free from recall bias. Recall bias also may possible for more distant events such as receipt of remittances over the years, frequencies of receipt of remittances, household income, and expenditure pattern, expenditure pattern of remittances, migration related cost, sources of migration finance, dietary patterns.

Four, for an accurate assessment of household food security conditions, understanding seasonal variation in food intake is critically important. Data for this study were collected through two field work periods, which captured some aspects of this seasonality of food security. However, the metrics used in the study did not specifically address seasonal variation in food and nutrient intakes, and the recall period was not sufficient to assess the adequacy of micronutrient intakes during the lean and post-harvest seasons.

Five, assessment of household food security conditions by asking people about their experiences have a deliberate bias as it may be possible that some households do not accurately report food-related coping mechanisms fully. For example, in Bangladeshi rural settings respondents are reluctant to report and express their inadequate consumption, food-related anxiety, and deprivation they may have experienced because of embarrassment.

Six, this study attempted to mitigate endogeneity of different variables by conducting a number of diagnostics tests and adopted widely used and well-established approaches such as an instrumental variable method. Although the efforts were taken to mitigate the problem, these approaches may have their own set of limitations. There are no tools or strategies that can remove the endogeneity problem entirely.

Based on the assessed limitations and findings of this research, the following areas for further research are suggested. **One**, debt-induced migration processes must be examined further in order to determine if migration, especially for low-skilled circular migrants, becomes a debt trap, a wealth creation option. **Two**, as remittances are mostly spent on household's subsistence needs they may only temporarily improve household food insecurity conditions. It is also possible that remittances can eradicate the more chronic and structural food insecurity problems by facilitating the accumulation of agricultural assets, improving investment in agricultural input and increasing agricultural productivity. **Three**, the role of remittances in improving the more structural food security problem through capital investment in agriculture should be further investigated using a larger representative sample, and the results of this used to develop appropriate policy frameworks. **Four**, as remittance flows are responsive to the welfare of the households, these resources have already been proven as a resilient financial

transfer during periods of financial crisis. Assessment of the role of remittances in different economic cycles with valid comparisons of a rural and urban sample using a large and representative sample is also important.

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Appendices

Informed consent form for the participants for the Survey on Research Project ‘Debt Financed Migration to Consumption Smoothing: Tracing the link between Migration and Food Security in Bangladesh’

You are being invited to participate in a research study about impact of migrants’ remittances to households’ food security. This research project is being conducted by Mohammad Moniruzzaman, doctoral candidate, Wilfrid Laurier University, Canada. The objective of this research project is to understand the impact of international migrants’ remittances on households’ food and nutritional security. It is being conducted in over 400 households in 3 migration concentrated districts in Bangladesh. The survey is being given to remittance receiving and non- receiving households in the survey areas.

There are no known risks if you decide to participate in this research study, nor are there any costs for participating in the study. The information you provide will help me understand what the links of migration and food security. The information collected may not benefit you directly. However, you will have an opportunity to reflect on your experiences, you will contribute to knowledge about the impact of remittances on households. Moreover, what I learn from this study should provide general benefits to understand migration and food security interlinkages. Your participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the research project. In addition, you may choose not to answer any questions with which you are not comfortable. You will not be penalized in any way should you choose not to participate or to withdraw. If you decide to withdraw from the survey after completion of the survey, you can also do that by communicating to the researcher’s contact address. Your information will be completely deleted from the database, if you wish to withdraw from the survey.

If you choose to participate, I will ask some structured questions about the income and expenditure pattern of remittances. It will take 20 minutes to complete the survey. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publications that result from this study. The information in the study records will be kept strictly confidential. Individual data will be stored securely. Only the researcher will have access to the dataset, no other people or third party will have access to your information. The findings of the study will be presented in different conferences and will be published in academic journals. No reference will be made in oral or written reports that could link you to the study. In the event of any publication or presentation resulting from the research, so personal identifiable information will be shared or disseminated.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at (88) 01711482833, 12269889034 or at moni3730@mylaurier.ca. Wilfrid Laurier University (WLU) in Canada, Ethics Review Board has reviewed my request to conduct this project. If you have any concerns about your rights in this study, you can contact the Office of Research Services at WLU, Phone: +1 519.884.0710 ext: 4994 or email: reb@wlu.ca.

I have read this consent form and have been given the opportunity to ask questions. I hereby grant permission to use the information.

I am also interested in receiving a summary of the research report when available: Yes No

Participant's Signature

Date

Remittance Household Survey 2014-2015
Household Questionnaire

Identification

Division:.....
District:
Upazilla:
Union:
Village:
Name of the respondent:
Name of the interviewer:.....
Date and time of interviewer’s visit:
1 st visit.....
2 nd visit.....

1 Characteristic of the Household

No		
101	Name of the head of the household	
102	Gender of the head of the household:	<input type="checkbox"/> M <input type="checkbox"/> F
103	Age	<input type="checkbox"/>
104	Education (Highest class passed)	<input type="checkbox"/>
105	Marital Status	<input type="checkbox"/> Married <input type="checkbox"/> Single/never married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed
106	Occupation	<input type="checkbox"/> Paid employment <input type="checkbox"/> Self employed <input type="checkbox"/> Agriculture work <input type="checkbox"/> Unemployed / looking for work <input type="checkbox"/> Trader <input type="checkbox"/> Housewife

		<input type="checkbox"/> Others (specify).....
107	How many people usually live in your household (15 years and above)	<input type="checkbox"/>
108	Number of Children under 15 years	<input type="checkbox"/>
109	Do the children go to school?	<input type="checkbox"/> Yes <input type="checkbox"/> No
110	What type of schools/institutions are they attending?	<input type="checkbox"/> Government <input type="checkbox"/> Private kindergarten <input type="checkbox"/> NGO run school <input type="checkbox"/> Madrasha <input type="checkbox"/> Others (specify).....
111	What is the main source of drinking water for members of your household?	<input type="checkbox"/> Piped Water <input type="checkbox"/> Tubewell <input type="checkbox"/> River/dam/lake/ponds/stream <input type="checkbox"/> Others (specify).....
112	What is the main source of water used by your household for other purposes such as cooking and hand washing?	<input type="checkbox"/> Piped Water <input type="checkbox"/> Tubewell <input type="checkbox"/> River/dam/lake/ponds/stream <input type="checkbox"/> Others (specify).....
113	What kind of toilet facility do members of your household usually use?	<input type="checkbox"/> Flush or pour flush toilet <input type="checkbox"/> Kacha latrine (perm) <input type="checkbox"/> Pacca latrine (pit) <input type="checkbox"/> No facility/bush/field <input type="checkbox"/> Others (specify).....
114	Does your household have electricity?	<input type="checkbox"/> Yes <input type="checkbox"/> No
115	Does your household have	Furniture <input type="checkbox"/> Yes <input type="checkbox"/> No. Radio/TV <input type="checkbox"/> Yes <input type="checkbox"/> No. Refrigerator <input type="checkbox"/> Yes <input type="checkbox"/> No. A mobile telephone? <input type="checkbox"/> Yes <input type="checkbox"/> No. Other notable asset (specify).....
116	What is the construction material of the walls of the main room?	<input type="checkbox"/> Brick/cement <input type="checkbox"/> Tin/CI sheet <input type="checkbox"/> Mud brick <input type="checkbox"/> Bamboos/wood

		<input type="checkbox"/> Others (specify).....
117	What is the construction material of the roof of the main room	<input type="checkbox"/> Brick/concrete/cement <input type="checkbox"/> Tin /CI sheet <input type="checkbox"/> Others (specify).....
118	Does your household own any homestead?	<input type="checkbox"/> Yes <input type="checkbox"/> No
119	Does your household own any land (other than the homestead land)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
120	How much land does your household now have (other than homestead land)?decimal
121	How much land mortgaged in?	<input type="checkbox"/>decimal
122	How much land mortgaged out?	<input type="checkbox"/>decimal
123	How much does your household usually earn in a month?	<input type="checkbox"/>Tk
124	What are the major income sources?	<input type="checkbox"/> Income from agriculture..... Tk <input type="checkbox"/> Income from job..... Tk <input type="checkbox"/> Income from business..... Tk <input type="checkbox"/> Rent from building/house..... Tk <input type="checkbox"/> Other sources (specify)..... Tk
125	Where do you buy your food?	<input type="checkbox"/> Local market <input type="checkbox"/> From mobile vendor <input type="checkbox"/> Weekly bazar/hut <input type="checkbox"/> Grocery stores <input type="checkbox"/> Own grown <input type="checkbox"/> Others (specify).....
126	How far is the nearest bazar/hat from your home?	<input type="checkbox"/>Km
127	Is any of the adult in your household member of Microcredit Institution	<input type="checkbox"/> Yes <input type="checkbox"/> No

	(e.g Grameen Bank, BRAC)?	
128	Does any adult in the household currently have any bank account?	<input type="checkbox"/> Yes <input type="checkbox"/> No
129	Does any adult in the household currently have a loan with any individual or institution?	<input type="checkbox"/> Yes <input type="checkbox"/> No
130	What is the outstanding amount of the loan and the interest rate?	<input type="checkbox"/> Amount.....TK <input type="checkbox"/> Interest rate.....
131	What was the source of the loan?	<input type="checkbox"/> Bank <input type="checkbox"/> NGO <input type="checkbox"/> Money lender <input type="checkbox"/> Shamity (other than NGO) <input type="checkbox"/> Relatives <input type="checkbox"/> Others (specify).....
132	What was the loan mainly used for? (Report primary 3 uses)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2 Migrants Profile

201	Does any of your family member work in a foreign country (migrant)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no skip to section 4)
202	How many members of the household living in foreign country	

		Migrant 1	Migrant 2
203	Name of the migrant		
204	Is the migrant male or female?	<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> M <input type="checkbox"/> F
205	How old is the migrant?	<input type="checkbox"/>	<input type="checkbox"/>
206	What is migrants' relationship with the head of the household?	<input type="checkbox"/>	<input type="checkbox"/>
207	What is the migrant's marital status?	<input type="checkbox"/> Married <input type="checkbox"/> Single/never married	<input type="checkbox"/> Married <input type="checkbox"/> Single/never married

		<input type="checkbox"/> Divorced <input type="checkbox"/> Widowed	<input type="checkbox"/> Divorced <input type="checkbox"/> Widowed
208	Which country is the migrant currently working/living in?	<input type="checkbox"/>	<input type="checkbox"/>
209	Is the migrant living temporary or permanently?	<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent	<input type="checkbox"/> Temporary <input type="checkbox"/> Permanent
210	Education of the migrants (Highest class passed)	<input type="checkbox"/>	<input type="checkbox"/>
211	What the migrant doing any work before he/she left Bangladesh to work /live in another country?	<input type="checkbox"/> Paid employment <input type="checkbox"/> Self employed <input type="checkbox"/> Agriculture work <input type="checkbox"/> Unemployed <input type="checkbox"/> Housewife <input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Paid employment <input type="checkbox"/> Self employed <input type="checkbox"/> Agriculture work <input type="checkbox"/> Unemployed <input type="checkbox"/> Housewife <input type="checkbox"/> Others (specify).....
212	Why did the migrant decide to leave Bangladesh?	<input type="checkbox"/> Couldn't afford family expenses <input type="checkbox"/> Economic hardship <input type="checkbox"/> To find new opportunity <input type="checkbox"/> To join relatives <input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Couldn't afford family expenses <input type="checkbox"/> Economic hardship <input type="checkbox"/> To find new opportunity <input type="checkbox"/> To join relatives <input type="checkbox"/> Others (specify).....
213	Who helped to migrate to the other country?	<input type="checkbox"/> Family/relatives <input type="checkbox"/> Friend <input type="checkbox"/> Government agency <input type="checkbox"/> Recruiting agents <input type="checkbox"/> Own effort	<input type="checkbox"/> Family/relatives <input type="checkbox"/> Friend <input type="checkbox"/> Government agency <input type="checkbox"/> Recruiting agents <input type="checkbox"/> Own effort

		<input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Others (specify).....
214	How much money in total did the migrant spend to go to the foreign country?TKTK
215	How did the migrant gather the fund to bear the cost?	<input type="checkbox"/> Selling land <input type="checkbox"/> Taking loan <input type="checkbox"/> Family members <input type="checkbox"/> Land mortgage <input type="checkbox"/> Selling jewellery <input type="checkbox"/> Personal savings <input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Selling land <input type="checkbox"/> Taking loan <input type="checkbox"/> Family members <input type="checkbox"/> Land mortgage <input type="checkbox"/> Selling jewellery <input type="checkbox"/> Personal savings <input type="checkbox"/> Others (specify).....
216	How much money did the migrant spend in going overseas?	<input type="checkbox"/> Visa fee..... <input type="checkbox"/> Air ticket..... <input type="checkbox"/> Recruiting agency..... <input type="checkbox"/> Government fee..... <input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Visa fee..... <input type="checkbox"/> Air ticket..... <input type="checkbox"/> Recruiting agency..... <input type="checkbox"/> Government fee..... <input type="checkbox"/> Others (specify).....
217	How much land did the migrant have to sell/mortgage?decimaldecimal
218	Has the migrant sent enough remittances to buy some land? /recover some of the land mortgaged out?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
219	If YES, how much land bough/recover?decimaldecimal
220	What does he/she (migrants' spouse) do?	<input type="checkbox"/> Paid employment <input type="checkbox"/> Self employed	<input type="checkbox"/> Paid employment <input type="checkbox"/> Self employed

		<input type="checkbox"/> Agriculture work <input type="checkbox"/> Unemployed <input type="checkbox"/> Housewife <input type="checkbox"/> Live with the migrant overseas <input type="checkbox"/> Others (specify).....	<input type="checkbox"/> Agriculture work <input type="checkbox"/> Unemployed <input type="checkbox"/> Housewife <input type="checkbox"/> Live with the migrant overseas <input type="checkbox"/> Others (specify).....
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3 International Remittances to the Household

No		
301	Does someone in your household receive money from the household member living abroad?	<input type="checkbox"/> Yes <input type="checkbox"/> No
302	From which country/countries do you receive remittances?	1..... 2.....
303	Who receive the money?	<input type="checkbox"/> Migrants' wife <input type="checkbox"/> Migrants' husband <input type="checkbox"/> Head of the household other than spouse <input type="checkbox"/> Others (specify).....
304	How often do you get money from the migrant? (Please specify how many times in a year)	<input type="checkbox"/>
305	How much money did you receive from the migrant during the past 12 months?	
306	Through which channel do you receive the money?	<input type="checkbox"/> Bank <input type="checkbox"/> Post office <input type="checkbox"/> Money transfer company <input type="checkbox"/> Friends and relatives <input type="checkbox"/> Hundi <input type="checkbox"/> Others(specify).....
307	Who decides how the money should be spent	<input type="checkbox"/> Migrants' wife <input type="checkbox"/> Migrants' husband

	/allocated	<input type="checkbox"/> Head of the household other than spouse <input type="checkbox"/> Others (specify).....
308	What kind of goods do you receive from the migrant? (include goods brought by the migrant during home visit)	<input type="checkbox"/> Electronic Goods (TV, VCD, Computer) <input type="checkbox"/> Mobile <input type="checkbox"/> Jewellery/gold <input type="checkbox"/> Clothes <input type="checkbox"/> Cosmetics <input type="checkbox"/> Household appliance <input type="checkbox"/> No goods received <input type="checkbox"/> Others (specify)....
309	What would be the value of goods sent by the migrant at current market prices?	<input type="checkbox"/> Electronics (TV, VCD, Computer)..... <input type="checkbox"/> Mobile..... <input type="checkbox"/> Jewellery/gold..... <input type="checkbox"/> Clothes..... <input type="checkbox"/> Cosmetics..... <input type="checkbox"/> Household appliance..... <input type="checkbox"/> Others (specify).....
310	Did your household receive any food from migrants?	<input type="checkbox"/> Yes <input type="checkbox"/> No
311	What kind of food do you receive from the migrant? (include item brought by the migrant during home visit)	

4 Expenditure and Investment

		Total spending	Spending from remittances
401	Did your household spend money to buy food and groceries over the last 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
402	Did your household spend money for medical services (e.g. doctors' fees, medicine, hospital, health related travel etc.) over the last 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
403	Did your household spend money for educational expenses over the last 12 months (e.g. fees, books, stationary, private tutor etc.)? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
404	Did your household spend money to purchase any land or property over the last 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
405	Did your household spend money to purchase any house/apartment over the last 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
406	Did your household spend money to purchase any other assets (e.g. stocks, FDR, other financial assets, jewellery) over the last 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
407	Did your household spend money to renovate home using remittances over the past 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
408	Did your household spend any money in agricultural inputs (e.g. seed, fertilizer, labour etc) over the past 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
409	Did your household invest money in business/ trading over the past 12 months? If yes, how much?	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N
410	Did your household invest any money in other purposes over the past 12 months? If yes, how much? Report three major investment (if any)	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N	<input type="checkbox"/> Y.....TK <input type="checkbox"/> N

	(i)		
	(ii)		
	(iii)		

5 Household Food Insecurity Access Scale (HFIAS) Measurement

			Code
501	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q502) 1=Yes	
501a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
502	In the past four weeks, were you or any household member not able to eat the Kinds of foods you preferred because of a lack of resources?	0 = No (skip to Q503) 1=Yes	
502a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
503	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0 = No (skip to Q504) 1=Yes	
503a	How often did this happen?	1 = Rarely (once or twice in the past four weeks)	

		<p>2 = Sometimes (three to ten times in the past four weeks)</p> <p>3 = Often (more than ten times in the past four weeks)</p>	
504	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	<p>0 = No (skip to Q505)</p> <p>1=Yes</p>	
504a	How often did this happen?	<p>1 = Rarely (once or twice in the past four weeks)</p> <p>2 = Sometimes (three to ten times in the past four weeks)</p> <p>3 = Often (more than ten times in the past four weeks)</p>	
505	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	<p>0 = No (skip to Q506)</p> <p>1=Yes</p>	
505a	How often did this happen?	<p>1 = Rarely (once or twice in the past four weeks)</p> <p>2 = Sometimes (three to ten times in the past four weeks)</p> <p>3 = Often (more than ten times in the past four weeks)</p>	
506	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	<p>0 = No (skip to Q507)</p> <p>1=Yes</p>	
506a	How often did this happen?	<p>1 = Rarely (once or twice in the past four weeks)</p>	

		2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
507	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q508) 1=Yes	
507a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
508	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (skip to Q509) 1=Yes	
508a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
509	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0 = No 1=Yes	
509a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)	

		3 = Often (more than ten times in the past four weeks)	
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6 Consumption Coping Strategy Responses (CSI)

601	In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your household had to: (Number of days out of the past seven):		(Use numbers 0 – 7 to answer number of days; Use NA for not applicable)
		Rely on less preferred and less expensive foods?	
		Borrow food, or rely on help from a friend or relative?	
		Purchase food on credit?	
		Gather wild food, hunt, or harvest immature crops?	
		Consume seed stock held for next season?	
		Send household members to eat elsewhere?	
		Send household members to beg?	
		Limit portion size at mealtimes?	
		Restrict consumption by adults in order for small children to eat?	
		Feed working members of HH at the expense of non-working members?	
		Reduce number of meals eaten in a day?	
Skip entire days without eating?			

602	Did you experience any shocks during the last 12 months?	<input type="checkbox"/> Yes <input type="checkbox"/> No
603	What was the shock?	<input type="checkbox"/> Reduction in the earnings <input type="checkbox"/> High prices of food

		<input type="checkbox"/> Death of income earner <input type="checkbox"/> Loss of jobs <input type="checkbox"/> Flood/drought or other natural calamities <input type="checkbox"/> High prices of agricultural inputs <input type="checkbox"/> Others (specify).....
604	As a result of the shock was there a decline in your households?	<input type="checkbox"/> Income <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Asset <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Food Production <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Food Purchase <input type="checkbox"/> Yes <input type="checkbox"/> No
605	How did your household cope with this shock? Up to three answers with rank for each shock experienced?	<input type="checkbox"/> Borrowing..... <input type="checkbox"/> Support from relatives/friends..... <input type="checkbox"/> Household members migrated..... <input type="checkbox"/> Selling land..... <input type="checkbox"/> Remittances from foreign country..... <input type="checkbox"/> Selling jewelry..... <input type="checkbox"/> Others(specify).....
606	As a result of shocks was there any decline in food consumption?	<input type="checkbox"/> Yes <input type="checkbox"/> No
607	If the food price increases how does your household afford sufficient food for your	<input type="checkbox"/> Using remittance <input type="checkbox"/> Switching to cheaper food <input type="checkbox"/> Using savings <input type="checkbox"/> Help from the neighbor <input type="checkbox"/> Others(specify).....

7 Household Dietary Diversity Score (HDDS)

I would like to ask you about all the different foods that your household members have eaten in the last 7 days. Could you please tell me how many days in the past week your household has eaten the following foods? (for each food, ask what the primary source of each food item eaten that week was, as well as the second main source of food, if any)

No	Group	Examples Do not count small quantities (less than 1 tea spoon)	How many days was the food item eaten in previous 7 days? 0 = Not eaten, 1= 1 day, 7= 7 days
1	Cereals	Rice, Ruti, Paratha, Bread or any other locally produced grain	1 ()
2	Tubers/roots	Carrots, Potatoes, Sweet Potatoes, Radish or other foods made other locally available tubes/roots	2 ()
3	Vegetables	Pumpkin, Tomatoes, Eggplant, Leafy Vegetables such as spinach or any other locally grown leafy vegetables such as Lalshak, Puishak, Kolmishak etc,	3 ()
4	Fruit	Mango, Banana, Pineapple, Jackfruit, Guava, Ripe papaya, other locally grown fruits e.g. Amra, kamranga, Amloki etc.	4 ()
5	Flesh meats/Organ meat	Beef, Chicken, Duck, Mutton, Liver, Kidney, Heart or other organ meats	5 ()
6	Eggs	Chicken, Duck, Koel etc	6 ()
7	Fish	Fresh Fish, Dried fish (sutki) etc.	7 ()
8	Legumes, Nuts and Seeds	beans, peas, lentils nuts, seeds or any other locally grown dal	8 ()
9	Milk and Milk Products	Milk, Cheese, Yogurt or Other local milk products such as Lassi, Matha etc.	9 ()

10	Oils and Fats	Ghee, Oil, Fats or butter added to food or used for cooking	10 ()
11	Sweets	Sugar, Honey, Gur, or Sugary foods such as Chocolates, Sweetmeats, Cookies and Cakes etc.	11 ()
12	Spices, Condiments, Beverages	Condiments, Tea, Coffee or Any other locally produces beverage such as different Sarbat	12 ()

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