

THE ROLE OF BRIDGING AND LINKING SOCIAL CAPITAL IN HOUSEHOLD
WEALTH: A CASE STUDY OF TWO LIVELIHOODS IN TREASURE BEACH,
JAMAICA

A Thesis presented to
the Faculty of the Department of Agriculture and Applied Economics
at the University of Missouri-Columbia

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by

MATTHEW PEZOLD

Dr. Georgeanne Artz, Thesis Supervisor

DECEMBER 2010

© Copyright by Matthew Pezold 2010
All Rights Reserved

The undersigned, appointed by the dean of the Graduate School,
have examined the thesis entitled

THE ROLE OF BRIDGING AND LINKING SOCIAL CAPITAL IN
HOUSEHOLD WEALTH: A CASE STUDY OF TWO LIVELIHOODS
IN TREASURE BEACH, JAMAICA

Presented by Matthew A. Pezold,

A candidate for the degree of Master of Science,

And hereby certify that, in their opinion, it is worthy of acceptance.

Professor Georgeanne Artz

Professor Corrine Valdivia

Professor David O'Brien

I would like to thank God for how He has generously provided for me during this long journey of discovery. Many thanks also go out to all my family and friends who have supported me, and kept me in their prayers. However, I would like to dedicate this research to all my friends and family in Jamaica. The people in the land of wood and water have been such an inspiration in my life. I only pray that one day I may be able to leave as powerful an impression on the world, as they have left in the folds of my heart. Please know that I am always with you. Mi soon come!!

ACKNOWLEDGEMENTS

I would like to thank my thesis advisor Dr. Artz for all the invaluable advice and guidance that she has so generously offered in my many times of need. I would also like to thank Dr. Valdivia and Dr. O'Brien who were both there to answer all my questions about research analysis. Special thanks also go out to Dr. Stallmann who gave me the courage and inspiration to take on such a daunting research project.

I am also indebted to Dorris D. and Christine M. Brown who generously created the Brown Research Fellowship. Without them this international research project never would have been possible. I would also like to thank the countless others that have helped me, namely Jessica my research assistant and the Boyett family who helped me navigate the wide world of grammar. Food for the Poor also generously provided me with wonderful advice and resources that proved invaluable while out in the field. Many thanks are also due to my friends Ryan, Rosie, and Lorraine who helped me navigate the political and social landscape of Jamaica, and Michael and Ken, my truest guides on the beaches and roads of Treasure Beach. Lastly, I would like to thank the farmers and fishers in Treasure Beach who so graciously shared with me, a stranger from a foreign land, their daily struggles and joys.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF FIGURES	xiii
LIST OF TABLES	ix
ABSTRACT.....	xi
Chapter1: Problem Statement	
Introduction.....	1
Problem.....	1
Livelihoods	3
Objectives	4
Conclusion	5
Chapter 2: Literature Review	
Introduction.....	6
Social Capital an Early Conceptualization	6
Types of Social Capital.....	8
Development Implications.....	9

Social Capital in Jamaica	14
Social Capital Creation in Jamaica	16
Conclusion	18
Chapter 3: Conceptual Framework	
Introduction	20
Framework	20
Research Hypothesis	23
Conclusion	23
Chapter 4: Methodology	
Introduction	26
Justification	26
General Methods	27
Sampling Methods	28
The Survey	30
The Key Informant Interviews	34
Chapter 5: Results	
Introduction	36

Location	37
Nature of the Community	37
Environmental and Economic Shocks	39
Description of the Fisher Sample.....	40
Description of the Farmer Sample	41
Fisher and Farmer Networks.....	42
Descriptive Statistics: Household Survey	43
Description of Key Informants	44
Organization/Group Discussion.....	47
Household Wealth.....	48
Analysis of Research Hypotheses	53
H1: Hypothesis.....	53
Controlling For Other Factors.....	56
Conclusion	62
Bonding Capital in Relation to Household Wealth	63
Key Informant Interviews and Bonding Capital Conclusion.....	66
H2: Hypothesis.....	69

Key Informant Interviews	73
Conclusion	74
H3: Hypothesis.....	75
Conclusion	79
Controlling For Other Factors.....	80
Conclusion	82
H4: Hypothesis.....	84
Correlations with Social Capital	85
Correlations with Trust	86
Correlations with the Control Variables	87
Conclusion	87
Chapter 6: Conclusion	
Conclusion	90
Limitations	95
Implications for Policymakers and Developers	97
Other Research Opportunities.....	101
Appendix I: Social Capital Household Survey	102

Appendix II: Social Capital Key Informant Interviews114

References 115

LIST OF FIGURES

Figure	Page
1. Social Capital Wealth Creation Framework.....	22

LIST OF TABLES

Table	Page
1. Treasure Beach Organizations.....	38
2. Descriptive Statistics of Fishers and Farmers	44
3. Key Informant's Background.....	46
4. Occupational Income Vs. House Size: Demographics.....	51
5. Household Characteristics by Wealth Classification	53
6. Wealth Measures Vs. Group Membership	54
7. Correlations of Household Wealth Measures.....	56
8. Household Wealth Vs. Group Membership: Controlling for Fishing Occupation...57	
9. Household Wealth Vs. Group Membership: Controlling for Farming Occupation .59	
10. Household Wealth Vs. Group Membership: Controlling for Ed.....	60
11. Household Wealth Vs. Group Membership: Controlling for Age	61
12. House Size Vs. Group Membership: Controlling for Size of Household	62
13. Informal Lending Network Vs. Household Wealth	65

14. Informal Social Network Vs. Household Wealth.....	66
15. Key Informant’s Interviews	68
16. Household Wealth Vs. Group Diversity	70
17. Household Wealth Vs. Mean Diversity Scores.....	72
18. Household Wealth Vs. Trust Index	77
19. Household Wealth Vs. Trust in Shopkeepers.....	78
20. Household Wealth Vs. Trust in Other Classes	79
21. Correlations of Household Wealth Measures.....	80
22. Controlling for Occupation, Age, Education, and Size of Household	82
23. House Size Vs. Well-being (Happiness).....	84
24. Correlations of Well-being Measures (Ability to Support Family)	86
25. Correlations of Well-being: Control Measures	87
26. House Size Vs. Happy with Current Income	89

THE ROLE OF BRIDGING AND LINKING SOCIAL CAPITAL IN HOUSEHOLD WEALTH: A CASE STUDY OF TWO LIVELIHOODS IN TREASURE BEACH, JAMAICA

Matthew Pezold

Dr. Georgeanne Artz, Thesis Advisor

ABSTRACT

The Caribbean is a developing region of the world that has struggled to overcome corrupt governmental programs and agencies. Poverty and crime are commonplace, and a strong distrust of government is often present. With that said, this research undertook a comparative case study of twenty fishers and twenty farmers in a unique Jamaican coastal community. Extensive qualitative and quantitative research analyzed the role of bridging and linking social capital in contributing to household wealth variations.

Contextual nuances revealed that the use of social capital varies by occupation. Key findings include positive relationships between formal group membership and group diversity and wealth creation for fishers and a negative relationship for farmers. Research found that bonding capital's informal networks play an important role in both occupations. Roles include reduced vulnerability (caused by environmental and economic shocks) of poorer fishers and farmers as well as providing access to technological information, financial capital, and technology, which facilitates household wealth creation. Consequently, developers and policymakers need to utilize this distinction of network preferences in order to more effectively address widespread poverty in Jamaica and throughout the region.

Chapter 1: Problem Statement

Introduction:

Recent research by economists and sociologists has linked the use of social capital to increased material wealth (Coleman, 1988; Bebbington, 1999; Narayan and Pritchett, 1999; Winter et al, 2002; Van Staveren and Knorringa, 2007). This work has improved the understanding of the factors that contribute to wealth inequality, but the roles that various types of social capital play in wealth creation are yet unclear. This research will undertake a case study of Treasure Beach, a small coastal community in the developing Caribbean nation of Jamaica and will analyze the role of bridging and linking social capital in contributing to the variations of household wealth found within and between two livelihoods¹.

Problem:

The Caribbean is a developing region of the world that has struggled to overcome corrupt governmental programs and agencies. Investors, economic developers, and developmental agencies, such as the World Bank, have expended much effort and many resources within this region, but with limited success (Wint, 2003; McConney et al, 2003; Henry and Miller, 2009; Bowen, 2009; Snyder et al, 2010). These developmental efforts, found largely within the tourism, manufacturing, and mining industries have led

¹ A livelihood is the means by which individuals support themselves.

to a general economic expansion across the region. However, many of the inhabitants have been excluded from these economic gains. Poverty and crime are commonplace, and a strong distrust of government is present. This distrust is widely attributed to many misplaced efforts and failed attempts by the governing bodies (Wint, 2003; McConney et al, 2003; Bowen, 2009). Much of the region is jaded towards “outsiders²” and a strong dose of skepticism is directed towards attempts at finding any meaningful or lasting solutions. Conceptually, this distrust has resulted in low stocks of social capital.

Social capital refers to the relationships among individuals, groups, and communities that can be accessed for social gain. Wint (2003) and Bowen (2009) argued that Jamaica’s low stocks of social capital are impeding the expansion and development of Jamaica’s economy and slowing the advancement of many people’s standard of living. However, no region or place is ever completely homogenous. Some Jamaican communities can be found that appear to run counter to this national trend. One such place is Treasure Beach, a small coastal fishing and farming community with a population of approximately 3,500 on the south coast of the island. Jamaicans have cited Treasure Beach as a place set apart from the rest of the country, where violence and mistrust are not commonplace. Instead in Treasure Beach, a community based vision for planning and tourism is actively directing the nature of development in the community. A number of local cooperatives, community organizations, and an internationally acclaimed nonprofit are working to improve the well-being of the community. One initiative to improve the region is a community website that serves as a local directory and allows community members and visitors to post various items, such as items for sale,

²By outsiders, it is meant people, groups, or institutions that either are from a different socioeconomic class, a different community, or place in the world.

pictures, upcoming events, and to advertise local business and services. Interestingly, this community based model appears to be more inclusive of the people who are living on the margins of society. Consequently, Treasure Beach presents an interesting case for research because it is characterized by high degrees of social capital relative to other communities in Jamaica and the Caribbean.

To explore this unique context, a case study approach is used to examine if the varying stocks of social capital are similarly tied to the varying economic situations of those living on the margins of society (i.e. fishers and farmers). This research will compare two prominent and traditionally subsistence livelihoods of fishing and farming. The key hypothesis being tested is that greater stocks and use of bridging and linking social capital (weak ties) increase household wealth. In addition, this research seeks to contribute to the understanding of how and why social capital stocks are used to increase household wealth by examining the differences among individuals engaged in each livelihood and by drawing comparisons between the two livelihoods. It is believed that these findings will help illustrate how bridging and linking social capital can be used to address household poverty. The ultimate intent is that lessons and examples of best practice will be drawn from this unique community that can inform policymakers and international developers. Lastly, this study will add to the literature about the role of bridging and linking social capital in household wealth creation.

Livelihoods:

The concept of livelihoods in a developing nation has inherent nuances not found in a well-developed nation. Traditional livelihoods in developing nations are typically

based on a subsistence way of life. What a person grows, collects, produces, or sells helps support the household financially, but more importantly helps feed the household (Chambers, 1995). This type of existence is closely tied to nature and the natural disasters that can disrupt a farm or a fishery - such as hurricanes, floods, droughts, and earthquakes. People live on a day-to-day basis, trying their best to provide for the necessities in life. There are rarely safety nets such as job, health, life, property, or crop insurance to reduce the vulnerability of the household. Neither do people retire when they turn sixty-five and collect a pension, or draw retirement benefits. In this type of world people depend on their family and neighbors to help them get by in times of need or as they age. Consequently, peoples' very existence is dependent upon their way of life providing enough to feed and house them. The heads of household frequently have a very specific skill set tied directly to their livelihood along with a limited education. This combination of vulnerability and highly specialized skills limits a person's option in a small community. Thus, fishers and farmers must find a way to provide for the household via their livelihood, or engage in migratory labor off the farm or boat, which is disruptive to family life. It is from this understanding of a livelihood that this research precedes. Developers working in policy and poverty alleviation must approach these issues with a full understanding of the central role of livelihoods and seek to understand how policies can be targeted to support the households in these situations.

Objectives:

This project has three primary objectives: 1) To measure social capital, human capital/demographic factors, and household wealth within each livelihood via a

household survey, 2) To analyze bridging and linking social capital's correlation to variations in household wealth within each livelihood and across livelihoods, while controlling for human capital and other exogenous factors, 3) To conduct key informant interviews to gain a better understanding of how and why bridging and linking social capital (networks) are used to create household wealth and which characteristics of these networks are most important.

Conclusion:

The contextual roles of social capital in wealth creation are in many ways still unclear. The research in this study seeks to explore the roles that the various types of social capital play for people living on the margins of society. This will be done by looking at the livelihoods of village fishers and farmers in Treasure Beach Jamaica, via a household survey and a key informant interviews. These two livelihoods were selected because they are the two prominent livelihoods in a community that appears to have above average stocks of social capital. Initial research by the researcher indicates that Treasure Beach has greater trust and cooperation among private and public institutions than other comparable communities (i.e. linking and bridging capital). The research in this study will explore trust levels and the utilization of social capital, while controlling for human capital and other exogenous factors.

Chapter 2: Literature Review

Introduction:

Wealth inequality among individuals, communities, and within and between livelihoods is a common reality in the world today. Due to this reality, much debate has been generated about the interaction of social and material capitals and their effects on wealth creation and wealth inequality. One reason for this debate is because the role of social capital is not fully understood by economists, developers, and policymakers; making clear that further research is necessary in order to deepen the understanding of the role of social capital. To address this, a number of topics will be explored in this literature review. For example, do the roles of social capital in wealth creation vary depending on place and context? Moreover, what is social capital's role for people living in developing nations and can social capital creation be fostered through development polices? Accordingly, these and many more topics will be explored in a developing nation context, with an emphasis on the Caribbean region.

Social Capital an Early Conceptualization:

Social capital refers to relationships among individuals, groups, and communities that can be accessed for social gain. During its theoretical infancy, the role and importance of social capital in the development of communities and nations was highly debated among economists, political scientists, and sociologists. The view that relationships within a community are a form of capital is a relatively new idea in the

social sciences. Bourdieu (1979) is commonly credited with introducing the conceptualized idea. He held an individualistic view, defining social capital as social networks that can be accessed for social gain. Later, Coleman (1988) explored the idea of social relations being valuable for families. Coleman defined social capital as any relationship that could be utilized for individual or collective gain. Essentially, Coleman viewed social capital as the vehicle for transmitting one generation's expectations, values, and wealth to the next generation. Next, Putnam (2000) popularized social capital as an asset that is held by communities/regions with his book *Bowling Alone*, which investigated the civic forces that link people and communities together into a cohesive unit. Putnam's book raised many questions about whether the U.S. society's strong individualistic tendencies are on the rise at the expense of civic engagement. Putnam's concern is that individualism is eroding collaborative efforts in society and thus depleting the stocks of social capital. Consequently, over the course of 20 years social capital has been viewed as an individualistic asset, a familial asset, and as a civic or communal asset.

As time progressed, the importance of social capital in economic development came to be more widely recognized. For example, Rupasingha et al (2000) found that U.S. counties with high levels of social capital (strong local and civic cohesiveness) had higher per capita income growth rates - a common indicator for economic development. Similarly, international organizations such as the World Bank found social capital to play a crucial role in development and have made it a key tenet in their developmental policies of household poverty alleviation (Bebbington et al 2004). Further developments in theory led researcher Bebbington (1999) and researchers/practitioners Flora and Flora (2008) to realize that social capital plays a complementary role with other types of capital

and assets, such as human, natural, and financial. Both Bebbington (1999) and Flora and Flora (2008) found that having strong relationships within and outside a community was not enough to fully address the issues of poverty. Flora and Flora found that when one of the seven capitals in their framework was overly dominant, the community's longevity or sustainability becomes threatened.

Other research revealed that the relationships found in social capital were essential in determining the economic advancements of individuals and societies (Woolcock, 2001). This is because social capital's relationships act as a basis by which people can trust one another enough to conduct trade and to make laws and regulations. Specifically, the social relationships found within social capital "influence both access to and productivity of economic resources" (Van Staveren and Knorringa, 2007). Collectively, theorists and developers realized that the relationships (networks) that are found within social capital do have value and that social capital works with other forms of capital to create wealth.

Types of Social Capital:

Social capital's multidimensional nature eventually became defined as: bonding, bridging, and linking. Bonding capital (or strong ties) is "the connections among individuals and groups with similar backgrounds" (Flora and Flora, 2008), which has elements of familial bonds and local community ties. These connections can be thought of as the close relationships found within families and between close friends within a community. Bridging capital (or weak ties) is defined as the connections between "diverse groups within a community to groups outside the community" (Flora and Flora,

2008), which has elements of inter-community and civic ties. These bonds can be thought of as friendly associations that people hold between coworkers and neighbors. Lastly, linking capital (or weak ties) is defined as the “relationships that exist between individuals and institutions” (Urwin et al, 2008). It is linking capital’s associations and networks that offer the means by which individuals and other institutions may benefit from access to resources via these institutions. Thus, theorists came to agree that there are different types of social capital and that these different types have different functions.

Social capital’s multidimensional nature is an asset that can benefit communities, societies, and individuals. It is the relationships and networks, which constitute social capital that help facilitate economic activity, because a basic level of trust and respect is necessary in facilitating trade and economic growth. Similarly, social capital serves as a means by which individuals and households can gain access to resources. Hence, addressing the level of social capital and subsequently the lack of access to resources such as financial capital, information, and technology is a critical component when working to address poverty issues in developing countries.

Development Implications:

Social capital theory’s multidimensional nature led to it being viewed as an all-encompassing capital which was not very effective in informing researchers and developers (Dasgupta and Serageldin, 2000). Critics Harriss and De Renzio (1997) found that much of social capital theory cast the roles of social capital as a competing one between civil society and the state. This implied that formal governments needed to reduce their role in society, in order to allow local organizations and groups to assume

more authority (decentralization). Yet, decentralization has been found impractical and controversial in many contexts. It is not always a matter of the government stepping back and giving the power back to the people. The people within these groups and organizations must have both the desire and capacity to assume a greater role in society. If decentralization occurs and there is a void of sufficient leadership, people often will be worse off than before the decentralization. Similarly, researchers such as Fox (1997) found that the limited understanding of social capital has lead developers to generate unexpected negative externalities, where local distributions of powers were disrupted in unintended and harmful ways. Fox found that new social capital was disrupting the effective mechanisms (relationships) that had been maintaining a stable society.

Starting in 1997, the development field turned to empirical research to document the applications and use of social capital. Both Bebbington (1999) and Narayan and Pritchett (1999) were pioneers in taking social capital theory and applying it to peasant villages and livelihood strategies. A livelihood strategy refers to the methods that individuals and households use to support both themselves and their way of life. Bebbington (1999) found that the developers and policymakers working in the Andean region of South America were discounting the important role that social capital played in accessing resources. Bebbington's framework found that the role of social capital was so specific that it actually helped determine who and how people conducted transactions, in addition to directing the flow of capital from one family member to another, i.e. remittances.

Thus, the first role of social capital in development, as found by Bebbington (1999) and Narayan and Pritchett (1999) was that social capital can serve as linkages

between individuals (households) that help reduce imperfect information and transaction costs. The improved linkages of social capital allow increased access to resources and makes them more affordable. In their work, Narayan and Pritchett looked at social clusters in rural Tanzania and measured social capital through various degrees of group membership and characteristics. Narayan and Pritchett found that group membership was important and that both social capital and human capital played key roles in raising household incomes in rural Tanzania. They found that social capital played a vital role in helping people in developing nation's access resources, which were necessary ingredients for greater household wealth creation.

The second role of social capital was that it helped households gain useful information that informed both their household consumption decisions and their business and employment decisions. Narayan and Pritchett (1999) and Winter et al (2002) research found that households with higher levels of social capital had better access to information. Winter et al (2002) found that rural Mexican communities that had higher levels of social capital had higher levels of wealth, better access to technology, and information. Access to new technology is important because it can increase household productivity and household receipts, and in turn household wealth.

A third role of social capital was that it improved the long term viability of people's way of life. Research by de Haan (2000) and Chambers (2004) showed that social capital played key roles in supporting sustainable livelihoods and in accessing resources in rural and developing nations. A sustainable livelihood is a way of life that is self-supporting and one that is not in jeopardy of failing. Allison and Horemans (2006) found that polices in West Africa that create social capital and help protect villagers'

livelihoods, can also help reduce village poverty. It is important to protect villager livelihoods because these households do not have the necessary skills nor means to simply start a new way of live. Similarly, Bebbington (1999), in his Andean studies found that social capital plays an important role in helping people to improve their livelihoods by helping households to better leverage their assets. Social capital allows the household's existing access to resources to be mobilized in productive ways that increases household wealth. For example, a household can be informed through a neighbor that the city market is short on potatoes, and is paying higher prices. Due to the information provided via social capital, the household is now equipped with new information, and this information may encourage the household to travel to a distant market in order to increase their returns on their produced capital (potatoes). Bebbington concludes that the linkages found in social capital conclusively plays a role in household wealth creation, and that developmental policy could facilitate stronger linkages.

The third role of social capital is that it helps reduce the vulnerability of households. Woolcock (2001) and Allison and Horemans (2006) found that social capital can help reduce village poverty by reducing the vulnerability and risk of villagers' livelihoods. The relationships found in social capital (networks) reduce risk by serving as a safety net that can mitigate economic and environmental shocks (Woolcock, 2001; Grant and Shillito, 2002; Wetterberg, 2007; Dudwick et al, 2006). Essentially, the trust found in relationships (bonding and bridging social capital) made households less vulnerable to natural and economic failures. This is because households can rely on their neighbors and family to support them during times of duress. Collectively, a general

consensus emerged that social capital is crucial for maintaining both household viability and livelihoods in rural communities and villages.

Conclusively, one can see that social capital plays a vital role in facilitating greater resource access for villagers and in supporting their livelihoods. Thus in extension, the lack of social capital can be indicative of a deficiency that is retarding economic growth and wealth creation. In fact, it would be beneficial if developers and policymakers could facilitate the creation of social capital. Rao and Ibanez (2003) found that trust between people and their government (linking capital) can be improved by social fund policies (i.e. community development grants, etc.) aimed at directly improving the well-being of people, thus increasing people's perception and trust in the government.

Woolcock (2001) remarks that since policies are meant to improve the lives of people, it is crucial that policy makers get the social relationships right. Woolcock's implication is that developmental policy can be harmful if it creates isolation between people, places, ideas, and information. A Van Staveren and Knorringa (2007) case study found that, "certain minimum levels of bonding relationships are necessary but not sufficient" in order for growth in economic trade. Findings such as Van Staveren and Knorringa (2007) and Woolcock (2001) are vital because they inform policymakers that policy creation can disrupt existing social capital and even the creation of the wrong forms of social capital can be insufficient or counterproductive in development. Additionally, Coleman (1988) found that social capital's transferability of bonded social capital is limited across time and space. This means that the further one physically or emotionally gets from their community, the less influence the bonded capital has on

human capital creation, and in turn wealth creation . Logically, this leads to the conclusion that social capital is frequently bound contextually to a given place or community and that developers/policymakers that seek to alleviate poverty must seek to strengthen the appropriate types of social capital for each individual community.

Social Capital in Jamaica:

Historically, the Caribbean Islands have had over 400 years of colonial rule filled with hegemony and resource extraction. Neither the government nor those engaged in trade were interested in investing in structural and cultural development, which are key components in building an independent and cohesive society. Consequently, as McConney et al (2003) found, the postcolonial period was dominated by patronage politics that lead to the citizenry's dependence on the government. This type of economic and institutional arrangement was not conducive in generating wealth equality, nor in fostering widespread social capital creation.

Later, the diminishing governmental supports within the region led to a diminishing of trust, independence, and cohesiveness within the populace. Frequent developmental and policy failures have made the Caribbean region highly skeptical of outsiders working within their nations and communities (Renard and Krishnarayan, 2000). Presently, the people in the island region have little faith in the competency of developers and policymakers because of the long lineage of failed efforts. The widespread institutional distrust throughout much of the region led to low stocks of linking social capital (Wint, 2003; McConney et al, 2003; Bowen, 2009) and highlights a

social capital deficit between the people and their governments, which inhibits economic expansion and growth.

Path dependency is the concept where history continues to shape both the institutional and economic activities long into the future (North, 1993). Jamaica, as one of the largest islands in the region, has had a fate quite similar to that of the whole Caribbean. This fate is characterized by low stocks of national social capital (linking and bridging) due to heightened levels of dependency and distrust of governmental agencies and partnerships that have contributed to persistent poverty (Osei, 2002; Wint, 2003). Similarly, Transparency International, an agency that ranks transparency and corruption levels of governments, found that Jamaica ranks ninety-nine out of one hundred and eighty. Put into perspective, Jamaica's government is more corrupt and less transparent than countries such as Cuba, ranked at sixty-one and China ranked at seventy-nine. This lack of transparency and abundance of corruption is an indication of the existing low stocks of national social capital, while Wint (2007) suggests that future policies must seek to create new stocks of social capital.

Bowen's (2009) case study of eight Jamaican communities found high levels of bonding capital aided in using governmental and developmental funds, but a broad mistrust of outsiders and low levels of bridging social capital slowed efforts to address persistent poverty and foster development. Bowen found that the communities with bridging and bonding capital were more effective in engaging linking capital. It is the linking capital that allowed communities to draw upon financial and informational resources from developers and NPOs and NGOs. When a community draws upon such resources, it can more effectively grow and develop economically.

Social Capital Creation in Jamaica:

While evidence suggests that Jamaica suffers from low stocks of social capital, those communities and the households within these communities that have bridging and bonding capital are financially better off. The question then becomes how can social capital be created? Antidotal evidence suggests that social capital can be created in a number of ways. The first example is when local village members voluntarily form local lending cooperatives that substitute for formal lending institutions. Due to localized trust and familiarity with a village, these cooperatives are able to provide access to financial capital. Here bonding and bridging social capital allows households' access to capital in order to purchase household items, seeds, and merchandise that can be remarketed to generate additional household revenues.

A second example of social capital creation is Food for the Poor (FFP) an international Faith Based Organization (FBO) that provides linking capital to households in Jamaica. Through an extensive network (social capital) of "churches, schools, hospitals, charities, and, NGOs, and governmental organizations, FFP creates access to food, housing, and supplies" (Food for the Poor, 2009). FFP collaborates with the government to provide new physical capital such as new sanitation and water systems, and even schools. Lastly, through FFP's extensive network they are able to provide access to new technology and information for village fishers and farmers. Collectively, FFP's linking social capital and organizational structure taps into the bridging and bonding social capital found within the communities to create access to resources. This increased access to resources helps improve the quality of lives in Jamaican households

and encourages greater household wealth accumulation. FFP's behavior is consistent with Bowen's (2009) findings that communities and households that are well bonded and well bridged are best able to tap into the wider linking networks of NGOs and FBOs such as Food for the Poor.

A third example of social capital creation is found in the Treasure Beach community. The fishing village through local grassroots organization and leadership has worked to increase community and household wealth through collaboration. Historically, there is a virtuous culture of social capital creation (path dependency) going back to the efforts of a Peace Corps volunteer in the late 1960s. Effectively, the volunteers used bridging social capital to share his human capital and organizational skills with the village fishers in the creation of a purchasing cooperative, which helps reduce costs, and increase household wealth. Today many local organizations work together in Treasure Beach to increase human capital stocks through "educational programs, networking organizations, and collaborative efforts with NGOs," (Treasure Beach, 2009). In Treasure Beach, all three forms of social capital are readily seen in their culture of cooperation and collaboration. Consequently, this fishing and farming village has been able to develop economically and increase household wealth beyond that of other fishing villages.

While the literature strongly suggests that social capital plays an important role in developmental strategies, all social capital is not created equal. Imbalances in bridging (weak ties) and bonding forms (strong ties) of social capital can lead to economic stagnation in certain groups and communities (Van Staveren and Knorringa, 2007). A society needs both bridging and bonding capital in order to foster trade and economic

development (Woodhouse, 2006). Again, this is of primary concern in Jamaica.

Bonding social capital may substitute for other forms of social capital and has been used in Jamaica as a coping mechanism to deal with environmental shocks such as hurricanes, and floods (Grant and Shillito, 2002; Wetterberg, 2007; Dudwick et al, 2006).

Conclusion:

It has been found that social capital does lead to greater wealth accumulation in Jamaican households and that each of the forms of social capital plays a role in addressing poverty by increasing access to information and resources. It is believed that the lack of widespread linking and bridging capital may explain why Jamaica has largely been ineffectual in addressing poverty. It seems that joint efforts will be required by individuals, communities, organizations, and institutions if Jamaica is going to seriously try to address widespread poverty. Encouragingly though, social capital creation is possible and it is shaped at many levels, from individuals, to families, to communities, and even by institutions. The anecdotal evidence suggests that the lack of access to resources is best addressed by tapping into the existing stocks of bridging and bonding capital.

However, the current literature fails to fully explain how the various types of social capital contribute to wealth creation. Rather, the literature suggests that more contextual research, rooted in both place and history is needed. Due to its collaborative history, Treasure Beach was selected as a case study community that might provide information regarding the roles of social capital in wealth creation. It is hoped that this case study of the two prominent subsistence livelihoods, fishing and farming, will

provide situational evidence about the actual utilization of social capital at the household level.

Chapter 3: Conceptual Framework

Introduction:

This section presents a conceptual framework for understanding how each of the three types of social capital contributes to wealth creation in Treasure Beach. A short discussion will explain the intricacies of the framework and the implications for the proposed study. Lastly, a series of hypotheses are developed for testing in the case study and are justified based on the conceptual framework and the literature review.

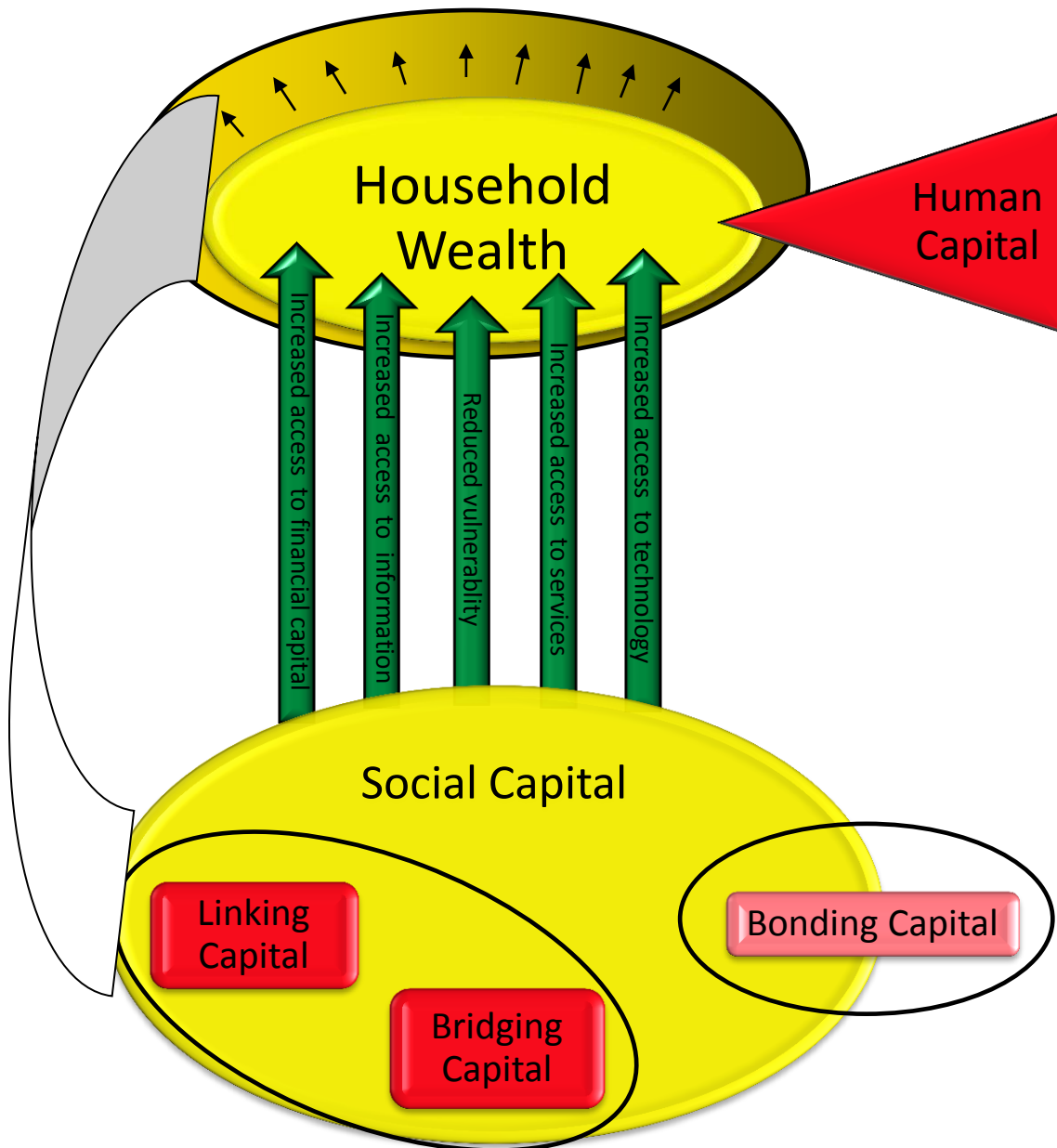
Framework:

In this study, social capital is conceptualized as a medium that allows people and households to increase their household wealth. Wealth is created in a number of ways, via productive capabilities of a person (human capital), the place and environment that people act in (community and place), and the relationships that allow interaction in the world (social capital). In Figure 1 below, social capital is divided into three basic types: bridging, linking, and bonding capital. Bridging and linking capital are believed to be more relevant in wealth creation and are clustered in the inner oval. Bonding capital is frequently used as a coping mechanism during times of duress and natural disasters, and is seen primarily as a wealth stabilizing mechanism, or safety net. However, there is a feedback loop between social capital and wealth creation indicating that increased wealth can induce investment in new stocks of social capital (bridging and linking). This simply

means that people who have wealth often have the time to invest in networking, and are interested in networking in order to further increase their wealth. The framework illustrates that social capital supports household wealth creation (as indicated by the green arrows) and helps to enlarge household wealth. The relationships found in social capital's networks help to increase access to information, technology, financial capital, resources and other services, and reduce vulnerability of the households. Collectively, social capital serves as a way to make households more productive and secure through the use of information, resources, and services.

Figure 1:

Social Capital
Wealth Creation
Framework



Research Hypothesis:

It is hypothesized that the variations in household wealth within a community can in part be explained by the differences in stocks of social capital that a household holds. Specifically, this study will test the following three hypothesis: H1: that households with greater stocks of bridging and linking capital will also have greater levels of household wealth; H2: that households with greater network diversity, will have higher levels of household wealth; H3: That households that exhibited greater levels of trust of others, and institutions, would have greater levels of wealth. H4: That household with greater levels of well-being will have greater levels of perceived material wealth.

The H1 hypothesis is grounded in the idea that the more connected a person is to dissimilar persons and varied institutions (bridging and linking capital), the better access he/she will have to technology, financial capital, and services (Narayan and Pritchett, 1999; Bebbington, 1999; Winter et al, 2002). As the old adage goes, it is not always what you know, it is who you know. Thus, greater access to services and resources allows households to be more productive and more profitable in marketing their products, which generates greater returns for the household (de Hann, 2000; Chambers, 2004; Van Staveren and Knorringa, 2007).

The H2 hypothesis is grounded in the idea that knowledge is power. Narayan and Pritchett, (1999) Bebbington, (1999) and Winter et al (2002) found that if a person has accurate and complete information, his/her decisions will be better and more informed. Thus in extension, the more varied and diverse a person's information sources are, the better informed they should be, because they have a greater amount of information to base their production decisions on. Similarly, Van Staveren and Knorringa (2007),

suggest that greater social capital leads to better information, which then encourages greater productivity and profitability in the marketing of products. Lastly, Bebbington's (1999) findings suggest that information channels and business transactions are frequently bound to close friendships/business associates (bonding and bridging capital) because it reduces transaction costs and risk. Consequently, the diversity and quality of information networks will be explored because social capital and quality information are closely intertwined.

The H3 hypothesis tests the theory that higher levels of trust are associated with greater cooperation, access to resources, and greater income (Lackey et al, 2003; Rao and Ibanez, 2003). If people are distrustful of groups, institutions, and people of different incomes/backgrounds, then they are potentially limiting their access to information, technology, ideas, financial capital and markets (i.e. customers). Thus, it is believed that households that are more outwardly trusting will have greater potential to generate more wealth, and household income, and will be financially be better off than the more distrustful households.

The H4 hypothesis is based on the interviewee's perception of material success, and an alternative measure of social capital - well-being - which includes community attachment measures, a measure of health and a measure of livelihood satisfaction. Well-being offers a multidimensionality that adds depth to the research (Diener and Oishi, 2000; Easterlin, 2003). Consequently, well-being acts as a proxy for household security and stability, or a lack of vulnerability. This hypothesis will test if self-perception of material success is consistent with the literature, and the previous three hypotheses.

Conclusion:

The social capital framework conceptualized social capital as a medium that allows households to increase their household wealth. Through the various forms of social capital, it is believed that households are able to gain access to information, financial capital, technology, and services. In extension, it is believed that households that are better at accessing these networks will be more productive and better able to generate wealth than those who do not have well developed stocks of social capital (networks). It is believed that the research will show that social capital utilization is associated with wealth creation among the more successful fishers and farmers of Treasure Beach. If indeed it is, then there will be greater justification for developers and policies makers to integrate social capital creation into their future development efforts in Jamaica and the Caribbean region.

Chapter 4: Methodology

Introduction:

In this section, the context and investigative approach will be defined for an intra-community livelihood study. In order to provide contextual research, a case study approach was employed to compare and contrast the levels and use of social capital in an intra-livelihood comparison among households and inter-livelihood comparison between fishing and farming households. Correspondingly, a mixed-method approach will utilize both a household survey and key informant interviews to help triangulate the study's findings. Collectively, this case study combines quantitative and qualitative research in order to determine the direction, and level of influence that social capital had on wealth creation for village fishers and farmers in Treasure Beach.

Justification:

This research employed a case study approach to compare and contrast the levels and use of social capital within and between the two prominent livelihoods of fishing and farming in the community of Treasure Beach. Treasure Beach was selected for a case study because it has a history of collaborative efforts (social capital) that are uncharacteristically high (Koss, 2008; Treasure Beach, 2009). As such, it represents a success story among Jamaican communities from which best practices might be learned. Treasure Beach's tourism industry has fostered a culture of openness and dialogue with

outsiders, which made it easier to enter into the community and gather meaningful data. Focusing on one community allowed the community and institutions to be held constant, while examining the variations in the household stocks of bridging and linking and to test their relationship with household wealth.

General Methods:

A multiple-embedded case study with the two sectors of fishing and farming were studied in Treasure Beach. Then within in each sector - low, medium, and high wealth households were studied to compare and contrast the social capital levels of each group in relation to household wealth. This type of case study approach was appropriate because the goal was to test the hypothesis that Treasure Beach's high stocks of social capital were replicated at the household level and if was, did it help alleviate household poverty. Over the past fifty years international development had largely discounted the role of place and history and tried to implement generalized, development theories that were more applicable to the developed world (Eucher and Staatz, 1998). It was argued that development efforts have been incomplete, because they did not account for the role that individual people and organizations play in fostering development. For this study, methods were selected to incorporate place and relationships, via a mixed-methods approach, which captured both qualitative and quantitative aspects of social capital. It was necessary to utilize multiple measures of social capital in this study because this research was conducted via a small data sample and because the causal relationship between social capital and household wealth was not clear. Instead, quantitative and

qualitative measures were paired together, thus helping to triangulate the findings (Yin, 2009; Woodhouse, 2006; Godoy et al, 2007).

Two primary instruments were used for this case study. To test the four hypotheses, the more quantitative portion, a household survey, gathered data measuring each of the three types of social capital, as well as human capital and household wealth, which was used to test the four hypotheses. The second instrument, semi-structured key informant interviews with selected participants, was qualitative in nature and was utilized to help determine the role of social capital in wealth creation.

Sampling Methods:

Purposeful sampling methods of Treasure Beach and the surrounding area were utilized in the survey, representing the stratification of incomes and operations within the fishing and farming livelihoods. The survey was conducted in person and was audibly recorded on an electronic device whenever possible. In order to insure that the desired sampling was achieved, potential participants were prescreened. This was accomplished through a few prescreening questions that investigated the participants' age, size, and type of operation. If the potential participants met the sample criteria (i.e. small, large, or diversified owner/operator fisher or farmer) the survey proceeded. Size/type of fishing operation included small: <100 fish pots (30%), large: 100 + fish pots (30%), and other: (i.e. hand lines, rods and reels, ecotourist operators, etc.), (40%). Size of farming operation included small: 1 acre or less (30%), medium: 1-5 acres (35 %), large: >5 acres (35%). Special efforts were made to ensure fisher/farmer diversity, (i.e. type of technique, age, gender). Operationally, spatial differences between each group

determined sampling techniques. The actual sampling was accomplished in a number of ways, primarily by utilizing the snowballing method, because a list of potential participants was not available (Fink, 2003). Using the snowballing method, a list of potential participants was gathered by individual references, from random, one-on-one encounters at the local health clinic.

The fishers were more centralized at each of the four fishing beaches and were easier to identify. The initial entrance into the community was made in a number of ways. The first way was through formal introductions by a FFP employee, who worked with the fishers in the community. Subsequent participants were identified via a combination of word of mouth, personal reference, or by accompaniment with community members to people's houses and to the local beaches. When necessary, the researchers would travel to meet the participants either by walking, or by riding a motorcycle with a local fisherman.

However, the snowballing method was at times insufficient in identifying fisher participants, and an alternative method was used to find a well-respected community leader among the fishers. In turn this leader arranged a meeting with the fishers at the fishing beach. This tactic helped dispel concerns that the researchers were associated with the government, or tax collection, and provided more participants for this study. From these initial interviews, subsequent participants were identified and located. A final tactic, when the other methods failed, was to engage in "cold calling" - which involved walking up to a fisherman on the beach, introducing oneself, telling them about the research project, and to asking them to participate.

Similarly, the snowballing method was also utilized to gather a sampling of farmers for the study. However, the actualization of this method took on a slightly different form, because the farmers in Treasure Beach are more geographically dispersed and harder to find. In this situation, the research assistant volunteered at a local health clinic in order to establish a positive reputation and to generate awareness within the community. As a result, many contacts were obtained as the research assistant networked within the community. In turn these contacts provided the names and numbers of potential farmer participants who would be willing to cooperate in the study. In this situation, the farmers typically met the research assistant at a central location, or the research assistant traveled with a community member via motorcycle to the farmer's property. Thus, the snowballing method provided a sampling of farmers for the case study.

The Survey:

The household survey solicited information about participants' stocks and use of social capital networks, household wealth, well-being and other control variables such as demographics and human capital (i.e. education levels and work experience). The survey was pre-tested and was reviewed by Food for the Poor upon arrival in Jamaica; this collaboration ensured that the household survey was culturally and linguistically appropriate. The survey questions were predominantly closed-ended in order to ensure consistency in participants' responses. Existing instruments and surveys such as the World Bank's Social Capital Survey and the American Household Survey, and others aided in the development of the survey questions and structure (American Household

Survey, 2009; Grootaert et al, 2004; Population Census, 2001; Valdivia, 2004). Other site specific information about the key formal and informal farmer and fisher networks was generated through consultation with community leaders. The survey was administered by the primary researcher and by a trained research assistant. Participants were offered a phone card valued at three dollars and the survey took approximately fifty minutes to complete. The survey sample included twenty people from each livelihood for a total sample size of forty people. Farmers and fishers were asked to voluntarily participate, and approximately five people declined. It was estimated that twenty percent of Treasure Beach's fisher owner/captains were surveyed. No estimates were found in relation to farmer population in the community.

Social capital stocks (social networks) were measured by membership in inter- and intra-community organizations (both formal and informal) and by the individual linkages (strength of ties) to institutions outside the community. One area of the survey focused on memberships in formal organizations (i.e. civic, professional, educational, institutional, and sport), as a representative measure of a household's social network. Different organizations represented different types of social capital. For example, membership in a bank (i.e. savings account) represented linking capital and access to financial resources beyond the community. Similarly, relationships to teachers and other community members in the local PTA represented bridging capital and access to information and resources. Respondents were also asked to identify the three most important formal organizations and their role in the organization in order to gauge the relative importance of each group and their level of involvement. See Appendix I for the complete survey instrument.

A second key area of the survey focused on participants' informal networks. Informal networks were thought of as the networks that did not have formal or permanent structures for governance, such as by-laws. These networks were made up of friends and family members and were used to measure bonding capital. Survey questions focused on the size, frequency, and importance of these informal networks. Other questions measured diversity of the informal groups and how likely the participants and their neighbors were to act collectively in a time of need. These networks were conceptualized as the shock/vulnerability-reducing assets associated with social capital that would be deployed to address critical needs (Woolcock, 2001; Grant and Shillito, 2002; Wetterberg, 2007; Dudwick et al, 2006; Allison and Horemans, 2006).

A third key area of the survey measured the trust found within the community. Questions in this section captured the level of trust that the participants had for various groups and institutions. Lackey et al (2003) found that trust was necessary for intergovernmental cooperation. Trust is important when it comes to accessing information and resources; if a household does not trust a group or institution, such as the government, they are unlikely to interact with that group. If this is the case, opportunities for collaboration, and the exchange of ideas, information, resources, and trade would be undermined, or lost all together. This is important because when a lack of trust is present, people tend to become more isolated, the community becomes fragmented and less interactive, and wealth inequality tends to increase (Knack and Keefer, 1997).

Household wealth was the primary dependent variable in this study and was captured in the household survey. The first section of the survey measured household wealth and was centered on household income - a driving factor behind wealth creation.

Because any given household had multiple streams of income, various measures of income were required. Such streams included occupational income, and other sources of income such as contributions from other household members, incomes from auxiliary enterprises, pensions, and remittances.

Since, wealth is a multidimensional concept and other measures were incorporated into the survey, such as personal, and productive capital (i.e. boats, vehicles, livestock, and land) related to the household's livelihood. In subsistence livelihoods, much of a household's wealth and means of support is generated within the household's enterprise or family business (i.e. fishing/farming). Correspondingly, an asset-based measure of wealth served as a proxy for household wealth. Within the survey, asset-based questions included the type of house owned (i.e. concrete or wood), size of house (i.e. the number of rooms), and other property owned, (TVs, refrigerators, household amenities, and land) served as other indicators of wealth.

A third area of household wealth creation focused on the production capabilities found within each operation. The survey investigated the number of people working for the fisher/farmer and the size of the operation (i.e. number of pots fished or the number of acres farmed).

Well-being was an alternative measure of household wealth creation. While income and wealth are often highly correlated with well-being, there are other factors related to household success and stability (Diener and Oishi, 2000; Easterlin, 2003). Well-being was measured on a scale from one to five and questions gauged how happy the participants were with their way of life, how attached they were to the community/family, and how well they were able to support their households. It was

hypothesized that participants who had larger social capital networks and greater access to resources and information would be happier, more involved, and more integrated into their community.

Demographic questions captured a number of control variables- including age, gender, household size, and human capital (years of education, and years of experience).

The Key Informant Interviews:

The key informant interviews solicited information about the relationship between social capital and wealth creation and were shaped by the responses of the household survey. The survey revealed an apparent lack of formal group membership in the less successful households and helped dictate the selection of the key informant interviewees. This limitation meant that these households would offer little insight into the particular roles of bridging, and linking capital. When coupled with a limited amount of time, this limitation led to the investigation of the most successful fishers/farmers because it was believed that their success stories could more fully inform the research. Consequently, six semi-structured interviews (three from each livelihood) were conducted in order to investigate how and why bonding, bridging, and linking social capital led to household wealth generation. The six key informants were representative of the more successful households and were drawn from the survey sample. Ultimately, the potential pool of successful candidates was determined by a subjective question regarding their self-perception of success and by household wealth indicators. Other important factors such as within group variation (i.e. type of fishing or farming, gender, and age) as well as availability were considered when selecting interviewees.

The primary purpose of the key informant interviews was to investigate what the participants believed contributed to their success. Interviewees' were asked if education played a significant role in their success, in order to control for the human capital explanations: and if family inheritances (stocks of physical capital) played a role in their success. Other questions investigated whether the relationships found in bonding capital, (family and friends) bridging capital, (community and recreational groups) and linking capital (civic and institutional ties) played a role in their success. If a certain person, group, or organization was cited, then the investigation delved into the contributory role they played. Specifically, questions investigated how and why the various forms of social capital lead to greater success and how each cited person/group/organization helped to improve access to various resources, such as information, technology, and financial capital. The interviews lasted thirty to ninety minutes each. See Appendix II for the key informant questionnaire.

Chapter 5: Results

Introduction:

In this section the results of the survey and interviews are analyzed in detail. First the background information on the context of the community, the groups, and the participants are explored. Next, the categorization of the wealth groups is explained, and the various groupings are compared. Lastly, the four hypotheses are analyzed to see if there is in fact a relationship between social capital and household wealth.

Location:

Treasure Beach is located on the southwestern coast of Jamaica and has a geographical area stretching six miles along the coast and about four miles inland. It is located in the parish of Saint Elizabeth and includes four fishing beaches and a number of other small villages. The environment is semi-arid desert and a mixture of rolling fertile foothills and rocky outcroppings. The highly productive parish of Saint Elizabeth and portions of Treasure Beach are considered to be the breadbasket of Jamaica. Here, fishers and farmers typically catch, or raise their products to be marketed to a middleman or a wholesale vendor.

Nature of the Community:

Treasure Beach has a number of community wide organizations within, and outside of the community (see Table 1 below). The organizations within the community include: a Fisherman Coop, Nonprofits (Breds and Treasure Beach Women's Group), educational groups (PTA), Neighborhood Watch Association, various Christian Churches, and various community groups (sport groups, community festival committees). Other important groups that are not exclusively found in the community include Ministry of Agriculture (RADA), political parties, Nonprofit (FFP) and various financial institutions.

From within the various organizations/groups listed, Breds is the largest, most active, dominant player in the community. Breds have accomplished a number of community projects, including: a primary school computer lab, volunteer ambulance service, a community computer center, tuition scholarships for high school students, sport field upgrades, and trash pickups. Currently, Breds is involved in an ambitious project for a community sports park and community center. However, some community members are distrustful of Breds efforts because they feel that they have been excluded in the community planning and that Breds has misappropriated funds in the past.

Treasure Beach is also a community that prides itself on its natural beauty, safety, friendliness, and authentic cultural approach to economic development. However, future ambitious projects, such as the sport park have the potential to alter the future and direction of the community. Efforts to include the whole community in its project planning are limited because the strong leadership of local businesspeople has found it unproductive to include the interests of the community at large. Interviews with key

informants throughout the community revealed that projects were successfully completed in the name of community, but some projects offered either limited communitywide support, or awareness. This limited community awareness and support within Treasure Beach is a concern because the communitywide reaction to the potential positive and negative changes has not fully been investigated. Other concerns include the limited collaboration between Breds and the Women's Group, who often share similar goals, such as communitywide literacy, but are not keen in sharing resources such as the computer labs.

Table1: Treasure Beach Organizations		
Organization Name	Purpose/Mission/General detail	% of Survey Households Involved
Fisher/Farmer Groups	Fisher Coop provides goods and financial services to fishers and farmers Farmer groups includes divisions of the Ministry of Agriculture such as Rural Agriculture Development Authority (RADA)	50%
Breds	A NPO that works to improve the community by providing services, scholarships, training, and technology	15%
Women's Group	Works to provide adult education, training, and free health services	5%
Educational Groups	Consists of primarily of the Parent Teacher Association (PTA) members includes parents and teachers	27.5%
Neighborhood Watch Association	Helps to ensure safety in the community	12.5%
Various Churches	Provides spiritual instruction, and aides those in need	57.5%
Various Community and Recreational Groups	Includes sporting/recreational groups, cultural and festival groups, miscellaneous groups	25%
Political Group	Political Party (i.e. strongly identifies with a party/votes)	22.5%
Food for the Poor (FFP)	A NPO that provides food and housing, as well as training and equipment for the fisherman and farmers in Jamaica	15%
Various Financial Institutions	Has or has had a savings account or has taken out a loan at a financial institution	69%

Environmental and Economic Shocks:

The area, like much of the island, has faced a number of recent shocks. As Farmer Number Two said, “we have a whole heap a rain, it mash up farming, yes mon, mash crops, and dey burst.” It is such volatile weather and numerous hurricanes, which

have strained the fishing industry. Losses include damaged houses, damaged/lost boats, and loss of fishing gear and pots. Additionally, the fishers are suffering due to a damaged seabed (hurricanes), dying coral reefs, and declining fishing populations due to overfishing and the exotic lion fish which is decimating the fishing stocks. In the past decade, it is estimated that forty to fifty percent of the fishers in the area have stopped fishing due to these losses. In response to these pressures, many fishers have transitioned into the farming livelihood; with the occasional fisher returning to the sea when sufficient financial capital becomes available. Other pressures include a deep recession within the country that is stemming demand for fish and strong upward pressures on fuel prices (a major production expense).

Farming within the region also is facing a number of shocks. The past year has been difficult due to an island wide drought, the worst in recent memory. Consequently, crops and production have suffered, and fires have destroyed a number of the farmers' crops and drip irrigation systems. Hurricanes have also damaged property and homes, and the current recession has suppressed demand, drastically lowering prices.

Additionally, it was suggested that a lack of market linkages and processing facilities was limiting farmer production and profitability.

Description of the Fisher Sample:

The fishing occupation in Treasure Beach is dominated by men, who are on average younger than the farmers. It is estimated that eighty boats operate from the four fishing bays, and that between two hundred and three hundred people are directly engaged in the capturing of fish. It was found that the majority of boats being used by

fishers are classified as large ocean canoes and operated by gasoline powered outboard motor. Also, the most common fishing techniques employed by the fishers were hand - lines, trotlines, rod and reels, and Antillean 'Z' fish traps (pots). In the sample, pot fishing is the dominant method, with small fishers operating one hundred or fewer pots per boat, and large fishers operating one hundred to three hundred pots per boat. The sample also included eco-guides/recreational fishers, rod and line fishers, and retired/displaced fishers. Two types of fish were captured: what is known as "quality" and "trash", with "quality" fish bringing approximately twice as much as "trash." Quality fish included snapper, wahoo, barracuda, mahi-mahi, tuna, kingfish, and lobster.

Description of the Farmer Sample:

The farmers found in Treasure Beach include both men and women of a wide range of ages, and a number of former fishers. Production methods for produce farmers include the use of pesticides, fertilizers, and grass mulch that suppresses weeds, and conserves moisture. The farmers' most common crops include watermelon, honey dew, cantaloupe, scallion, pumpkin, tomatoes, and peanuts. Subsistence on small plots of land (two acres or less) is extremely difficult; the medium sized farms range from three to five acres and the large farms are over six acres. Both the medium and large farms frequently used drip irrigation systems and all crops are planted and harvested with manual labor. The region also holds a number of livestock farms that raise goats, and a few ultra large farms raising sheep and cattle. The largest livestock farmer in the survey had one hundred and twenty goats and the largest produce/livestock farmer operated on over sixty acres.

Fisher and Farmer Networks:

The fisher and farmer livelihoods directly shape the nature of the networks that make up social capital. Fishers spend much of their time fifty to one hundred miles out at sea in a small boat, for multiple days at time. As Fisher Three said, in reference to storms, “sometimes this massive one come, and oh mi God dis is it.” Consequently, the three to four men in the boat are dependent upon one another for survival. Thus, cooperation (bonding capital) is essential in order to get their jobs done, and return safely from sea. In their realm, they cannot control their domain (the sea) and everything seems to revolve around the beach, an area that the community controls. When they are not at sea, fishers have a lot of free time, and the beaches are often filled with fishers, who can be seen helping one another repair their boats, bringing in the catch, and socializing with other community members. Collectively, this interdependency amongst fishers suggests a predisposition for a more communal orientation towards life and a greater openness for collective and civic minded organizations. It is these organizations which make up formal bridging and linking capital and are represented by the fisher Coop and community organizations such as Breds.

Conversely, farmers operate on a different framework, wherein they own (personal property rights) or at least control the domain (physical space) in which they operate. They spend much time working in the fields of the hinterland, not near the population centers of Treasure Beach. Consequently, farmers tend to have a more independent and individualist mentality and have less time for socialization. Farmers appear to be more utilitarian toward these types of relationships. For example, farmers belong to a church for worship, and develop close personal relationships with vendors

and suppliers because it helps support their livelihood. However, their greater isolation suggests a greater need for mobility and vehicles such as trucks and vans to transport inputs and supplies. Interestingly, it is this greater mobility that allows farmers to have more relationships outside the community.

Collectively, it appears that the nature of each livelihood creates a dichotomy between farmer and fisher networks. Differences in the nature of their transactions help structure the nature of networks. For farmers, the relevant networks involve service providers, and other business people (i.e. shopkeepers and vendors) who make-up the informal forms of bonding and bridging capital. Hence, farmers are drawn to where their occupation leads them. Farmers are more likely to conduct transactions with a number of businesses both in and outside the community because they have to buy inputs through farm stores in larger communities. Fishers on the other hand, live in areas with greater population density and have many of their occupational suppliers close by. Fishers can purchase many of their supplies (i.e. fishing gear from the fisher Coop) and ice from the local ice house, and sell their fish to vendors on the beach without ever leaving the community. Jointly this suggests a lesser need for fisher mobility and a greater concentration of civic based networks for fishers inside the community.

Descriptive Statistics: Household Survey:

Table 2 below, provides descriptive statistics that highlight the commonalties and differences between the fisher and farmer survey sample. A total of twenty fishers and twenty farmers participated in the household survey, though not all participant responses are complete. The fishers are on average younger, more educated, more likely to have

received occupational training, and have larger families. Both the fishers and the farmers are equally experienced in their occupation, and are equally as likely to have experienced a financial or environmental hardship. Both of these occupations are dominated by males, with no female fishers found and only four female farmers participating in the survey. Lastly, farmers are more likely than fishers to have more than one household member contributing financially.

Table 2: Descriptive Statistics of Fishers and Farmers

	Fisher Min	Fisher Max	Fisher Average or %	Farmer Min	Farmer Max	Farmer Average or %
Participant age	26.0	72.0	45.9	40.0	68.0	53.4
Participant sex	20/20 male			16/20 male		
Years of education	4.0	12.0	8.4	0.0	12.0	6.5
Years in occupation	7.0	46.0	26.7	1.0	40.0	26.5
Received training	7/20			5/20		
# people in household	1.0	10.0	4.0	1.0	7.0	3.5
# multi income households	9/20			11/20		
Experience hardship	18/20			18/19		

Description of Key Informants:

Descriptions of the three successful fishers and three successful farmers who participated in the key informant interviews are shown in Table 3 below. These six participants are later classified as either high or medium wealth households. All the participants believed that character traits such as hard work, perseverance, dedication, and innovation played a role in their success. Also, the participating fishers are more educated than the farmers. All six of the participants learned their livelihood from another fisher/farmer, frequently someone in their family. However, none of fishers had

formal training, while two of the three farmers had received training, and advice from the Rural Agriculture Development Authority (RADA). Each of the fishers has their own path to success. Fisher one's strategy involved sharing equipment and expenses, while Fisher two's and Fisher three's strategy involved gradual growth, and accessing capital to help grow the business, often through family members. Fisher two has diversified into farming and Fisher three gradually has diversified into ecotourism and boarding. The farmer participants have their own paths to success as well. Farmer one and Farmer three depend on the relationships found in family and friends to help the business grow and to find new buyers. Farmer two has a more independent approach and said that "hard work and a never give up" mentality allowed her to expand her operation over time and to diversify into boarding (i.e. vacation cottages).

Table 3: Key Informant’s Background

<i>Participant ID</i>	<i>Human Capital</i>	<i>Background</i>	<i>Reasons for Success</i>
<u>Fisher 1</u> 36 year old Male	12 years of education. 21 years fishing experience. No formal training (i.e. Ministry of ag/FFP). Father and captain taught FSH1 how to fish.	Worked hard to save up and purchase ½ of a boat. Uses 100 fish pots. Shares expenses with a partner. Lives with parents and is the primary income earner for the family.	Hard work, studied fish behavior
<u>Fisher 2</u> 52 year old Male	11 years of education. 34 years fishing experience. No formal training (i.e. Ministry of ag/FFP). Father taught FSH2 how to fish.	Worked hard saving and building up business. Uses 300 pots. Accessed financial capital through family and fishing coop. Capital allowed FSH2 to be successful. FSH2 has diversified into farming 21 acres of crops/goats.	Hard work, ambition
<u>Fisher 3</u> 39 year old Male	8 years of education. 23 years fishing experience. No formal training (i.e. Ministry of ag/FFP). Captain taught FSH3 how to fish.	Worked as a fisherman for many years, gradually diversified into ecotourism/sport fishing. Later, social capital allowed FSH3 to be seasonally employed as a landscaper in the United States.	Hard work, perseverance, focus, passion

Table 3: Key Informant’s Background: Continued

<i>Participant ID</i>	<i>Human Capital</i>	<i>Background</i>	<i>Reasons for Success</i>
<i>Farmer 1</i> 46 year old male	9 years of education. 30 years farming experience. Trained via RADA.	Farms 16 acres of produce/goats. RADA provided key training that lead to FRM1 success. Family collaborates in raising produce and in growing FRM1’s buyer network.	Hard work, dedication, training
<i>Farmer 2</i> 68 year old female	5 years of education. 40 years farming experience. Learned by trial and error and from father.	Hard work helped to grow the business. Currently manages 60 acres of produce/goats. Rents to vacation cottages.	Hard work, perseverance
<i>Farmer 3</i> 40 year old male	4 years of education. 14 years farming experience. Trained via RADA and learned from extended family.	Aunt and uncle helped provide the basic knowledge. Farms 3 acres of produce. RADA helped to develop FRM3’s farming enterprise and techniques. Relationships key to establishing vendor network and to growing the business.	Determination, education, family/community support

Organization/Group Discussion:

While groups and influential organizations in the community have already been discussed, the frequency of fisher and farmer involvement has not been explored. A group that is important communitywide might not play a big role in the lives of fisher or farmer households. For example, Breds is a major player in the community, because they shape a lot of the local policy, and yet only fifteen percent of the sample households are involved with the organization. As seen previously in Table 1, groups such as the Fisher

Cooperative and RADA are very important with fifty percent of the participants involved in these groups. Other popular groups within the community include Christian churches (57.5%), educational groups such as the PTA (27.5%) and civic and recreational groups (25%). Important groups and organizations outside the community include financial institutions (69%), political groups (22.5%), and FFP (15%). The groups in this study that are expected to directly impact farmer and fisher livelihoods are: the Fisherman Coop, RADA, FFP, and the financial institutions because these groups and organizations provide goods, services, training, and access to technology, and financial capital.

Household Wealth:

The measurement of wealth is a complex and dynamic process, because it is a process that takes place over time, often using multiple sources of wealth generation and accumulation. In this study various ways to measure household wealth were considered, two major possibilities included an asset index and a wealth index. These were ruled out due to a limited response rate for some measures, and the inability to quantitatively differentiate between households with other measures. For example, many households had other sources of income, but not all of them reported an amount. Hence, a yes or no response makes it difficult to differentiate between households. A third option included a weighted wealth score, which used multiple streams of income, size of house, and various other wealth indicators, such as vehicle ownership. This option was a hybrid of income and wealth measures that gave the more significant measures of wealth a greater weight than smaller measures of wealth. For example, house size had a greater weight than occupational income, because the value of a house exceeds the magnitude of a one year

stream of income. This option was explored in depth, but there was too much potential for subjectivity in assigning the weights of the various wealth components.

Ideally, a single measure of wealth would be used, but the results of the household survey indicate that a single a measure of wealth is insufficient because many of the fishers and farmers operate on a cash-in-cash-out basis and had difficulty reporting a net income. Fisher three summarized this idea well when he said, “mi never keep track of nuffing, if keep track, put pressure on the brain.” In this study it was found this is a common mentality among the participants and that many believed that keeping records leads to too much worry and stress. Additionally, Hadey and Wooden (2004) found that when examining broader concepts, like well-being, it is better to use wealth measures as opposed to income measures. This is because income captures only a single dimension of well-being, while owning property and a house also helps to provide security. Responses of income varied, but efforts were made to adjust all occupational income into a yearly figure. For example, if a fisher household reported a weekly or monthly income, they were adjusted to reflect 40 weeks at sea, since it is typically not practical to fish during the summer due to regulatory restrictions and the biological cycles of fish.

In response, two measures of wealth were selected in order to more accurately capture the whole picture. In selecting appropriate measures of wealth for fishers and farmers, two criteria were met: one, that the measure is common to both fisher and farmer households. For example, fishers invest capital into boats and pots, and farmers invest capital in land and equipment, consequently, this makes comparisons across groups difficult and hence productive capital is not included as a measure of wealth. The wealth measure also had to meet the second criteria; it had to capture variability between

households. For example, over ninety percent of the respondents had running water, electricity, cell phones, and TVs, thus these measures are not utilized for the final wealth measurement.

Ultimately, occupational income and number of rooms in a house were selected to represent two dimensions of wealth. Occupational income represents a present stream of income into the household on a yearly basis. Conversely, the number of rooms represents an accumulation of wealth of the entire household across time. To a limited degree, the size of house helps account for the various past streams of income of the entire household. The size of a house is an important measure of wealth because in Jamaica, houses are gradually built over many years, as households purchase the necessary supplies and labor. Jamaican houses are works-in-progress that represent both a store of wealth, and a hedge against future inflationary pressures. The sample was divided into terciles, of approximately thirds, which also closely approximated natural breaks in the data. The resulting classifications were; small, medium, and large houses and low, medium, and high income households. Measures were then rated on a scale of one to three depending on what tercile a household falls into with three being either high income, or a large house. This grouping helped reduce possible measurement error/noise in house size and occupational income because households with similar wealth characteristics were grouped into the same classification.

However, the dual dimension of household wealth leads to variations in classification. Since two measures are used, some variation is to be expected because occupational income captures a one year stream of earnings (i.e. short-term wealth). Short-term wealth can be affected by various shocks to the household, such as natural

disasters, and economic pressures (i.e. recessions, and rising cost of inputs). Conversely, house size better captures the long-term fiscal picture of a household. As seen in Table 4 below, twenty-one of the households remain in same classification of wealth (i.e. small-house, low occupational income). Of the remaining seventeen households, thirteen of them are classified in an adjoining classification (i.e. large-house, medium occupational income). The four remaining households are classified in non-adjoining categories (i.e. small house, high occupational income). Of these, three are fishers, and one is a farmer. The three fishers are between forty-five and forty-seven years of age, and have households with four to five people. Two of the fishers have nine to ten years of education and one has five years. Two of the three fishers are high-income, small-house households. The last non-adjoining classification is a fifty-seven year old farmer, with no formal education, a two person household, and has a high-income, but a small-house.

Table 4: Occupational Income Vs. House Size: Demographics

	Low-Occupational Income	Medium-Occupational Income	High-Occupational Income
Small-House	8/13 61.5%	2/13 15.4%	3/12 25%
Medium-House	4/13 30.8%	6/13 46.2%	2/12 16.7%
Large-House	1/13 7.7%	5/13 38.5%	7/12 58.3%

Other differences in wealth classification and household demographics need to be explored in order to better understand the nature of the various wealth groups. In the Table 5 below, both measures of wealth are examined. The averages in the table indicate that fisher households are more likely to be low-income, small-house households. Additionally, low-income, small-house households tend to be younger, more educated,

and have larger families than the wealthier households. Both occupations are dominated by males, but there are four female farmers who are classified in the medium and high wealth categories. Women were specifically targeted for inclusion in the study, and the snowballing technique and the fact that they might belong to the same informal networks might explain why female farmers all happened to be wealthier.

Wealth accumulation increases with occupational experience, meaning that the longer one has been in an occupation, the more time one has had to accumulate wealth. Home ownership increases with size of house and vehicle ownership increases with income. Additionally, secondary sources of income are more important for small-house households, than for large-house households. This implies that as a household accumulates long-term wealth, they have less need to diversify their sources of income. This could be because the number of relationships decreases, as a participant grows wealthier and as they become more reliant on one or two key vendors. Lastly, communication dependency changes with wealth. Wealthier households use their cell phones and communicate face-to-face more frequently. The fact that face-to-face communication increases with wealth, suggests that the interpersonal relationships found in bonding and bridging capital (close networks of friends and associates) is related to wealth generation.

Table 5: Household Characteristics by Wealth Classification

	Low- Oc.- Income	Medium- Oc.- Income	High- Oc.- Income	Small- House	Medium -House	Large- House
% that are fisher households	47%	37%	16%	45%	30%	25%
% male	100%	100%	66.7%	100%	92.9%	76.9%
Mean years of occupational experience	21.6	28.2	28.5	20.6	28.4	30.6
% receiving occupational training	23.1%	38.5%	33.3%	30.8%	28.6%	30.8%
Mean age	47.9	47.0	53.6	44.1	51.6	53.2
Mean ed	8.8	6.4	6.8	7.9	7.6	6.6
% own their house	76.9%	53.8%	83.3%	61.5%	71.4%	84.6%
Mean family size	4.2	3.4	3.8	4.0	3.5	3.6
% that own a vehicle	23.1%	38.5%	100%	30.8%	57.1%	76.9%
Other sources of income	76.9%	76.9%	75%	84.6%	71.4%	64.2%
% use cell phone very often	61.5%	84.6%	92.3%	69.2%	64.3%	100%
% use face to face very often	84.6%	69.2%	83.3%	69.2%	71.4%	84.6%

Analysis of Research Hypotheses:

The following sections present evidence relevant to each of the four hypotheses. Each of the hypotheses is tested for validity and human capital is controlled for by factors such as age, education, and occupation.

H1: Hypothesis:

Households with greater stocks of bridging and linking capital will also have greater levels of household wealth.

Bridging and linking capital are measured by households' participation in various organizations including institutional memberships (saving accounts), Non-profit

associations (FFP, Breds, Women’s Group), church memberships, occupational groups (Fisher Coop, RADA), and civic/recreational groups and committees (Hook and Line Fishing Tournament, Neighborhood Watch Association, etc.). This hypothesis was tested by examining how group membership and associations are related to levels of household of wealth, using both measures of household wealth, as seen in Table 6 below.

Table 6: Wealth Measures Vs. Group Membership

Occupational Income Vs. Group Membership							
Group Membership		0	1-2	3-4	5-7	Total Group Mem.	Mean
Low-Occupational Income	<i>N = 13</i>	1	3	7	2	41	3.2
Medium-Occupational Income	<i>N = 13</i>		9	3	1	28	2.2
High-Occupational Income	<i>N = 12</i>		6	3	3	37	3.1
Total		1	18	13	6	106	2.8
House Size Vs. Group Membership							
Group Membership		0	1-2	3-4	5-7	Total Group Mem.	Mean
Small-House	<i>N = 13</i>	1	4	5	3	39	3.0
Medium-House	<i>N = 14</i>	1	4	6	3	45	3.2
Large-House	<i>N = 13</i>		10	2	1	29	2.2
Total		2	18	13	7	113	2.8

The results in Table 6, above indicate that greater household wealth does not appear to be associated with higher levels of group membership. This result also is partially confirmed by the correlation in the Table 7 below, which shows a negative although not significant relationship between wealth and group membership. This finding suggests other factors could be at play in relation to household wealth. Factors such as household labor could be the driving factor behind income and wealth and are common to “moral economies” (Scott, 1976 and Bernal, 1994). Moral economies are familial based ways of life; where the family works together in order to generate income, food, and

labor. Unique to this situation, families make production and labor decision based off the desire to minimize risk or failure, because failure to produce enough food and income often results in starvation.

Returning to Table 7, income and membership trends indicate that most low-income households belong to three to four groups, while most medium and high income households' belong to one to two groups. When looking at house size, the large-house households have a more limited range of membership, with most households belonging to one to two groups. The variations seen between group membership and wealth measures is in part because income is a short-term measure and house-size is a long-term measure, thus offering two different classifications of a household's wealth.

Households that fall within the various wealth categories have differences (i.e. occupation, age, education, size of family, etc.). Alternative relationships with group membership (bridging and linking capital) are explored below. Table 7 displays the correlations between group membership and wealth, and other characteristics, such as human capital (i.e. age, education, occupation) or household size (collective capacity to generate income and need of a household). Group membership is positively and significantly correlated with education levels of the participant. Additionally, occupational income is positively and significantly correlated with occupation while house size is positively and significantly related to age. In the following tables, the relationship between group membership and wealth are explored by separately accounting for occupation, education, age, and size of household.

Table 7: Correlations of Household Wealth Measures³

Kendall's Tau b	Group Membership	House-Size	Oc-Income	Age	Ed	Occupation	Household-Size
Group Membership	1.000	-.145	-.064	-.179	.417**	-.243	.210
House-Size	-.145	1.000	.399**	.262*	-.181	.234	-.022
Oc- Income	-.064	.399**	1.000	.170	-.198	.336*	.007
Age	-.179	.262*	.170	1.000	-.332**	.317*	-.246*
Ed	.417**	-.181	-.198	-.332**	1.000	-.254	.223
Occupation	-.243	.234	.336*	.317*	-.254	1.000	-.071
Household-Size	.210	-.022	.007	-.246*	.223	-.071	1.000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Controlling for Other Factors:

Table 8 shows the relationship between wealth and group membership for respondents in the fishing occupation. The majority of fishers fall into the low and medium categorizations of wealth. None-the-less, it does appear that high-income fishing is associated with greater levels of group membership. High-income fishers have a higher average group membership rate than the other two classifications. Yet, when looking at size of house, it appears that large-house households are less likely to be involved in groups than small and medium-house households. It is not clear why these variations exist other than the two wealth measures produce different groupings as was seen in Table 5 previously.

³Kendall's Tau b correlations are used because the sample is not random and because this is a small data sample with multiple ties in response (i.e. multiple households with the same ranking of income or house).

**Table 8: Household Wealth Vs. Group Membership:
Controlling for Fishing Occupation**

Fisher Occupational Income Vs. Group Membership						N=19	
Group Membership	0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Low-Occupational Income	1	3	4	1	9	24	2.7
Medium-Occupational Income		4	2	1	7	18	2.6
High-Occupational Income		0	0	3	3	18	6.0
Total	1	7	6	5	19	60	3.2

Fisher House Size Vs. Group Membership						N=20	
Group Membership	0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Small-House	1	3	2	3	9	28	3.1
Medium-House		1	3	2	6	24	4.0
Large-House		3	1	1	5	15	3.0
Total	1	7	6	6	20	67	3.4

Table 9 presents results for respondents in the farming occupation, with most of the farmers falling into the medium and high categorizations of wealth. Among farmers, wealth is negatively related to group membership, with low-income, small-house households belonging to the most number of groups. The variations between occupations show that fishers, on average belong to approximately one more group than farmers, which implies that fishers are more likely to engage in group membership. Specifically, membership in the fisher Coop is likely out of practicality (it is the closest place to buy supplies) but it is not a requirement for purchasing supplies. Conversely, a farmer choosing to work with RADA is more optional and likely only occurs out of need, or because of a significant financial benefit. The most pronounced difference between the two occupations is found in the high-income classifications, with fishers belonging to two to three more groups on average than farmers. The collective trend is that fishers are

more likely to belong to multiple groups, and that wealth creation is positively related to group membership for fishers, and negatively related for farmers. This trend is likely due to a lack of trust in service providers by the wealthier farmer households, which is consistent with the key informant findings. Farmer three explained his situation best when he said that there are disincentives created by the government and that there are two factors at play according to the key informant. The first is that RADA requires financial records be kept and submitted, in order to gain access to their programs and funds (i.e. irrigation funds via the USAID). However, these records are also submitted to the government, and then farmers have to pay more taxes. Thus, a strong sense of distrust is created, discouraging future collaborations. The second factor is corruption in government agencies and the “cronyism” that is practiced. For example, during a recent period of flooding, the government was distributing seeds to help farmers replace the lost crops. As Farmer three explained, the distribution of seeds is partially corrupt, and the determining factor for seed distribution is often who ones knows. Hence, a farmer, who is not well connected, is discouraged from: one, trusting the government and two, using governmental services.

**Table 9: Household Wealth Vs. Group Membership:
Controlling for Farming Occupation**

Farmer Occupational Income Vs. Group Membership							N=19
Group Membership	Group Membership				Total	Total Group	
	0	1-2	3-4	5-7		Mem.	Mean
Low-Occupational Income			3	1	4	17	4.3
Medium-Occupational Income		5	1		6	10	1.7
High-Occupational Income		6	3		9	19	2.1
Total	0	11	7	1	19	46	2.4

Farmer House Size Vs. Group Membership							N=20
Group Membership	Group Membership				Total	Total Group	
	0	1-2	3-4	5-7		Mem.	Mean
Small-House	1	1	3		5	11	2.8
Medium-House		3	3	1	7	21	2.6
Large-House		7	1		8	14	1.8
Total	1	11	7	1	20	46	2.3

Variations by **education level** are shown in Table 10 below. Education level is broken into two groups according to a natural break, below-average (eight years or less) and above-average (more than eight years). No obvious trends by wealth are found, but total mean group membership rates are higher for above-average educated households, than they are for below-average educated households. This suggests that those more educated are more willing to participate in groups, thus allowing them more points of access than the less educated households.

**Table 10: Household Wealth Vs. Group Membership:
Controlling for Ed**

Occupational Income Vs. Group Membership: Controlling for Ed								N=38
Group Membership		0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Below-Average	Total	1	12	5	2	20	46	2.3
	Low-Occ. Income	1	1	2		4	8	2.0
	Medium-Occ. Income		7	2		9	17	1.9
	High-Occ. Income		4	1	2	7	21	3.0
Above -Average Ed	Total	0	6	8	4	18	60	3.3
	Low-Occ. Income		2	5	2	9	33	3.7
	Medium-Occ. Income		2	1	1	4	11	2.8
	High-Occ. Income		2	2	1	5	16	3.2
	Total	1	18	13	6	38	106	2.8
House Size Vs. Group Membership: Controlling for Ed								N=40
Group Membership		0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Below-Average Ed	Total	2	12	5	2	21	46	2.2
	Small-House	1	1	1	1	4	10	2.5
	Medium-House	1	4	3		8	15	1.9
	Large-House		7	1	1	9	21	2.3
Above -Average Ed	Total	0	6	8	5	19	67	3.5
	Small-House		3	4	2	9	29	3.2
	Medium-House			3	3	6	30	5.0
	Large-House		3	1		4	8	2.0
	Total	2	18	13	7	40	113	2.8

Age is controlled for in Table 11 below. Age of the participants is broken into two groups according to a natural break, below-average (fifty years or less) and above-average (more than fifty years). A single negative trend is seen within the above-average age group vs. income measures. However, total mean group membership rates are higher for below-average age households, than they are for above average age households.

**Table 11: Household Wealth Vs. Group Membership:
Controlling for Age**

Occupational Income Vs. Group Membership: Controlling for Age								N=38
Group Membership		0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Below-Average Age	Total	1	7	7	6	21	68	3.2
	Low-Occ. Income	1	2	4	2	9	28	3.1
	Medium-Occ. Income	0	4	1	1	6	14	2.3
	High-Occ. Income	0	1	2	3	6	26	4.3
Above -Average Age	Total	0	11	6	0	17	38	2.2
	Low-Occ. Income	0	1	3	0	4	13	3.3
	Medium-Occ. Income	0	5	2	0	7	14	2.0
	High-Occ. Income	0	5	1	0	6	11	1.8
	Total	1	18	13	6	38	106	2.8

House Size Vs. Group Membership: Controlling for Age								N=40
Group Membership		0	1-2	3-4	5-7	Total	Total Group Mem.	Mean
Below-Average Age	Total	1	7	7	6	21	68	3.2
	Small-House	1	2	4	3	10	33	3.3
	Medium-House	0	1	2	2	5	20	4.0
	Large-House	0	4	1	1	6	15	2.5
Above -Average Age	Total	1	11	6	1	19	45	2.4
	Small-House	0	2	1	0	3	6	2.0
	Medium-House	1	3	4	1	9	25	2.8
	Large-House	0	6	1	0	7	14	2.0
	Total	2	18	13	7	40	113	2.8

Household size is controlled for in Table 12 below. Size is controlled for because a larger house has more potential needs, and more potential people to participate in groups. Household size is broken into two groups according to a natural break, below-average (three or less people) and above-average (more than three people). Looking at mean membership rates by house-size, there is a negative relationship between group membership with above-average size of households. This implies that

when larger families live in smaller houses, they are more likely to be involved in groups than a large family living in a large house. This could be due to more needs at the household level, or depending on the age of the household members - more total opportunities and time for the parents and the older children to be involved in groups.

**Table 12: House Size Vs. Group Membership:
Controlling for Size of Household**

N=40

Group Membership	Group Membership				Total Group		
	0	1-2	3-4	5-7	Total	Mem.	Mean
Below-Average Household Size							
Total	2	8	6	2	18	42	2.3
Small-House	1	2	3	0	6	11	1.8
Medium-House	1	2	2	2	7	21	3.0
Large-House	0	4	1	0	5	10	2.0
Above -Average Household Size							
Total	2	8	6	2	22	71	3.2
Small-House	0	2	2	3	7	28	4.0
Medium-House	0	2	4	1	7	24	3.4
Large-House	0	6	1	1	8	19	2.4
Total	2	18	13	7	40	113	2.8

Conclusion:

In conclusion, it appears that bridging and linking capital are partially related to wealth creation. When looking at income and controlling for occupation (livelihood strategy), it appears that groups membership is positively associated with fisher wealth creation, and negatively related to farmer wealth creation. This is in agreement with Bebbington, (1999) Woolcock, (2001) and Allison and Horemans (2006) who collectively suggest that the use of social capital is closely related to livelihood strategy. This means that different livelihoods are likely to utilize different forms of social capital. Overall, when controlling for age and education (human capital) the more educated and

younger households are more likely to belong to multiple groups. When controlling for human capital and income, two diverging trends emerge. The first trend is that younger or less educated high-income households belong on average to more groups than younger or less educated low-income households. Yet, the exact opposite is found with older or more educated households. These split results are in contradiction to Narayan and Pritchett (1999) who found that higher levels of social capital and human capital are jointly associated with wealth. Here higher income households with lower levels of human capital (i.e. younger or less educated) have higher group membership rates (bridging and linking). Conversely, high-income households with more human capital (older or more educated) are less involved in groups than their low-income counterparts. This suggests that this group of participants become less dependent on bridging and linking capital as they become wealthier. Thus, it appears that some households might be substituting one form of social capital for another. In this study, it would appear that bonding capital is substitute for linking and bridging capital. Bonding capital is cited by all six of the key informants as having played an important role in their success and in generating wealth.

Bonding Capital in Relation to Household Wealth:⁴

Key informant interviews reveal that access to financial capital is a key factor in their successes, and that it is what allowed them to grow their business. A lack of

⁴A number of bonding capital measures are examined for trends in relation to the two measures of wealth. These include, # of people the participant talks to weekly, (size of informal social network) mean # of times visited other people in their home in a month's time, (social network usage/frequency) and how often the participant talks to and sees family members (strength of bonds in social network). None of these measures show any relationship to household wealth. However, the # of non-household family members living in Treasure Beach (size of network) is negatively related to both measures of wealth, meaning that poorer households tended to have larger families than wealthier households.

collateral, often at the start-up phase, makes it difficult for households to access sufficient capital. Thus, households that can access financial capital via their families or friends (bonding capital) are at a decided advantage. In Table 13, there is a strong positive relationship between wealth and size of the informal lending network⁵. This suggests that wealthier households have more points of access to capital (i.e. more people that they can borrow from) than lower income households. This was particularly evident with the key informant fishers, with all three reporting that they had borrowed money from their family to either grow/maintain their business, or to help pay for their house. Collectively, this implies that wealthier households are utilizing bonding capital to access financial resources to address household needs as they arise. Specifically, the indicator in Table 13 was worded in a manner that would include factors such as economic or environmental shocks or a sudden domestic need. Thus, the positive trends in this table suggest a potential usage of bonding capital to mitigate shocks, a conclusion which agrees Woolcock, (2001) Grant and Shillito, (2002) Wetterberg, (2007) and Dudwick et al (2006).

⁵The figure seen in Table 13 is constructed by totaling the number of people/banks in the 1st and 2nd choice to borrow money from in times of emergencies and subtracting the number of banks for a total number of people.

Table 13: Informal Lending Network Vs. Household Wealth

	Mean # of people willing and able to lend money	Total# of people willing and able to lend money		Mean # of people willing and able to lend money	Total# of people willing and able to lend money
Low-Occupational Income <i>N=11</i>	5.6	62	Small-House <i>N=13</i>	6.1	79
Medium-Occupational Income <i>N=11</i>	8.0	88	Medium-House <i>N=11</i>	9.5	105
High-Occupational Income <i>N=11</i>	11.0	121	Large-House <i>N=11</i>	9.9	109
<i>Total</i>	<i>8.2</i>	<i>271</i>	<i>Total</i>	<i>8.4</i>	<i>293</i>

Similarly, there are other measures of social capital to be considered. One measure that is not related to wealth, is how many people (i.e. size of network) a person talks to on a weekly basis. It is believed that this measure captures too much noise, meaning, a very social person in this community likely talks to anyone they might happen to encounter. In that scenario the measurement does not capture the strength of the active social network (bonding capital). How often other people visit the participant at their house, in a month's time, is a better indicator of network size and usage. People that visit a person's house are either close friends, family members, business associates, or both. Hence by extension, this measure captures the usage of a household's active social network. Additionally, it captures visitors' initiative, which is a proxy for bonding capital strength. As seen in Table 14 below, there is a strong positive relationship associated

with household wealth and the frequency of visitors in a month's time. As a result, the wealthier a household is, the more frequently people visit them in their homes. Thus, it appears that size of network is positively related to household wealth. This is not surprising because farmers sell to vendors who come to them in person to purchase their goods. Hence, the number of people that visit a farmer's house should be a proxy for size of a farmer's social and buyer network.

Table 14: Informal Social Network Vs. Household Wealth

	Mean # times people visit your house in a month's time	Total # times people visit your house in a month's time		Mean # times people visit your house in a month's time	Total # times people visit your house in a month's time
Low-Occupational Income <i>N=13</i>	6.9	90	Small-House <i>N=13</i>	6.7	87
Medium-Occupational Income <i>N=13</i>	10.7	139	Medium-House <i>N=14</i>	9.5	133
High-Occupational Income <i>N=12</i>	12.4	149	Large-House <i>N=13</i>	12.9	168
Total	9.9	378	Total	9.7	388

Key Informant Interviews and Bonding Capital Conclusion:

In Table 15 below, the key informant interviews and the role of social capital is summarized for each of the six participants. A common theme is found within each livelihood, and each participant attributes their success to intangible traits such as good morals, hard work, and dedication, rather than their formal education. Yet, when delving deeper, it becomes apparent that social capital plays a role in their success. Bonding

capital was the most prevalent form of social capital found among the six participants, as is also suggested by the household survey results. Bonding capital plays various roles through family members by teaching values, work ethics, and skills (i.e. human capital). As Farmer two said, my “uncle and auntie, are the one who teach me how to prepare the soil, and prepare the seedbed.” A second important role is that it allows participants to gain access to financial capital through family members. This is consistent with the results in Table 13, which suggests a strong relationship between informal lending networks and wealth creation. Table 15 suggests that this capital is utilized to establish their livelihoods, or to grow it (i.e. new boats, equipment, and technology). In fact, Fisher three said that he borrowed money from his mother and cousin to buy his first boat. This is because when buying a boat, or building a house he said that, “in my line of work, it is not sensible to take a loan because... because I cannot guarantee a week’s pay.” Thus, in the fishing occupation, weekly, or even monthly income is highly volatile, which makes regular payments of loans impractical. Lastly, relationships with friends are also important because they often share ideas, information, techniques, and teach each other how to use new forms of technology (i.e. GPS for fisherman). Collectively, this suggests that bonding capital is more than simply a coping mechanism as Grant and Shillito, (2002) Wetterberg, (2007) and Dudwick et al (2006) suggested. Rather, bonding capital can also be utilized by successful households in the establishment, development, and growth of a livelihood.

Table 15: Key Informant’s Interviews

Type of Social Capital		Social Capital Detail
<u><i>Fisher 1</i></u>	Bonding Capital	<ol style="list-style-type: none"> 1) Relationship with his captain allowed him to grow his physical capital/financial capital 2) Partnership with friend allowed him to share operating cost (i.e. fuel, ice) 3) Borrowed money from family/friends 4) Friends taught him how to use GPS 5) Living with family, helped him save money 6) Family taught him to save money
<u><i>Fisher 2</i></u>	Bonding Capital	<ol style="list-style-type: none"> 1) Learned morals, and values from father 2) Family helped finance the building of his home
	Linking Capital	<ol style="list-style-type: none"> 1) Fishing coop helped save on expenses, and provided access to financial capital
	Bridging Capital	<ol style="list-style-type: none"> 1) Community connections helped him accumulate wealth 2) Shared ideas, skills, and techniques with others
<u><i>Fisher 3</i></u>	Bonding Capital	<ol style="list-style-type: none"> 1) Relationship with captain allowed him to build capital and skills
		<ol style="list-style-type: none"> 2) Relatives, lent money, and equipment (age10)
		<ol style="list-style-type: none"> 3) Family taught him to save money
	Bridging Capital	<ol style="list-style-type: none"> 1) Relationships with tourists helped him work abroad, and to earn extra income

Table 15: Key Informant’s Interviews Continued

Type of Social Capital		Social Capital Detail
<i>Farmer 1</i>	Bonding Capital	1) Family worked well together 2) Family networks helped him grow the business (i.e. helped him find buyers)
	Linking Capital	1) Training from Ministry of Agriculture played an important role in growing the business
	Bridging Capital	1) Shared ideas, skills, and techniques with others
<i>Farmer 2</i>	Bonding Capital	1) Father taught her how to farm 2) Having family overseas, allowed her to work overseas and save money
<i>Farmer 3</i>	Bonding Capital	1) Family taught him how to farm 2) Family contributed by providing labor
	Linking Capital	1) Ministry of Agriculture provided training, information, resources
	Bridging Capital	1) Community supported him 2) Personal relationships with people and vendors helped the business succeed 3) Shared ideas, training, technology in the community

H2: Hypothesis:

Households with greater network diversity will have higher levels of household wealth.

This hypothesis is tested by examining the associations between network diversity of groups and levels of household of wealth. Network diversity is measured by a participant’s membership in three types of groups: Occupational Groups, Domestic Groups, and Civic Groups. The occupational groups include the fisher Coop, FFP, and

RADA; the domestic groups include church membership, saving accounts, and belonging to the PTA; and finally the civic group includes various volunteer committees, Breds, Women’s group, and the Hook and Line Fishing Tournament. The diversity score is a sum of the number of types of groups a participant belongs to, and ranges from a minimum of zero to a maximum of three. Looking at the wealth measures in Table 16 below, it can be seen that the means do not vary from low-income, to high-income households. The majority of the high-income households either have a diversity of one, or three, suggesting that some other factor might be directly related to two polar trends (i.e. occupation, education, age). Looking at house-size, wealthier households have lower diversity score on average than the small and medium-house size households. This suggests that households have a tendency to belong to a less diverse set of groups and associations as they accumulate wealth.

Table 16: Household Wealth Vs. Group Diversity

Occupational Income Vs. Group Diversity					
Group Diversity Count	0	1	2	3	Mean
Low-Occupational Income	1	3	6	3	<i>1.8</i>
Medium-Occupational Income		5	7	1	<i>1.7</i>
High-Occupational Income		6	2	4	<i>1.8</i>
House Size Vs. Group Diversity					
Group Diversity Count	0	1	2	3	Mean
Small-House	1	4	4	4	<i>1.8</i>
Medium-House	1	4	5	4	<i>1.9</i>
Large-House		6	6	1	<i>1.6</i>

Table 17 below controls for occupation, age, education, and size of household. Income is compared with occupation, age, and education, and house size is

compared with size of household. These measures were selected because they show the strongest and most consistent trends between each of the sub groupings of wealth.

In **Controlling for Occupation** two opposite trends in the diversity scores arise. Fisher households' wealth increases in conjunction with group diversity, while farmer group diversity decreases with increased income levels. Additionally, the fishers have a higher mean diversity score than farmers. Overall, this finding is consistent with the fact that farmers tend to be more independently focused in their activities, while fishers naturally have to cooperate while working at sea.

In **Controlling for Age**, again opposite trends appear. Younger households' diversity increases with income levels, while older households' diversity decreases with rising income levels. Conversely, older low-income households, have higher mean score than younger low-income households. Overall, younger households have a higher mean diversity score, than older households.

Controlling for Education, once again, polar trends appear. Less educated households' diversity score increases with income levels, while more educated households' diversity scores decreases with rising income levels. However, it is important to note that all of the more educated households sub groups have higher mean diversity scores than less educated household sub groups. Overall, more educated households have a higher mean diversity score, than less educated households.

Lastly, in **Controlling for Size of Household**, a single trend appears, with larger households' diversity decreasing with increasing house-size. Overall, larger households have a higher mean diversity score than smaller households.

Table 17: Household Wealth Vs. Mean Diversity Scores

Controlling for:	Occupation	Age	Education	Size of Household	
Fisher		Below-Average			
Low-Income	1.78	1.67	1.00	Small-House	1.33
Medium-Income	2.00	1.83	1.56	Medium-House	1.71
High-Income	3.00	2.33	1.71	Large-House	1.60
Total	2.05	1.90	1.50	Total	1.56
Farmer		Above-Average			
Low-Income	2.00	2.25	2.22	Small-House	2.29
Medium-Income	1.33	1.57	2.00	Medium-House	1.86
High-Income	1.33	1.17	1.80	Large-House	1.63
Total	1.47	1.59	2.06	Total	1.91
Grand Total	1.76	1.76	1.76	Grand Total	1.75

Additional investigation of the **most successful fisher households** reveals that six of seven fishers belong to an occupational group (i.e. fishing coop, FFP), that six of seven fishers belong to domestic group, (i.e. church, bank, PTA) and that five of seven belong to a civic group (i.e. Breds, Women’s Group, etc.). The most distinguishing trait between the seven most successful fisher households and the rest of the fisher sample is that most successful fishers belong to a civic group. Only four of thirteen less successful fishers belong to a civic group.

Looking at the **most successful farmer households**, it is seen that one of the eleven farmers belong to a civic group, three of eleven belong to an occupational group, and all eleven belong to a domestic group. Of all the farmers belonging to a domestic group - nine of eleven belong to a bank, eight of eleven belong to a church, and one of eleven belongs to the PTA. This suggests that civic groups are important for successful

fisher households, and that banks and churches are the two domestic groups that are most prominently associated with successful farmers. Fisher's preference for civic groups is possibly due to the fact that they have a stronger interdependency for survival at sea, whereas farmers seem to have a more utilitarian preference towards groups (i.e. church is for worship and banks are for saving and borrowing money).

Key Informant Interviews:

Taking a slightly different look at social capital diversity, the key informant interviews seen in Table 15 suggest that social capital diversity is important. However, it must be noted that bonding capital is not included in the previous diversity scores, because bonding capital is not based on formal groups or organizations. Additionally, four of the six participants are below average age (i.e. younger), and likely have a different strategy than older households. Regardless, all successful households utilize bonding capital and four out of six participants utilize a second or third form of social capital (i.e. bridging, linking, or both forms). This is consistent with the general hypothesis that successful households utilize more than one type of social capital and more than one type of group.

In the fisher households, relationships with people within and outside the community (bridging capital) helped the fishers to gain access to buyers/customers, and linking capital helped fishers' purchase supplies at a discounted rate through the fisher Coop. Similarly, two of the three farmers utilized linking capital through the Ministry of Agriculture to gain information about new farming technologies and techniques in order to improve the productivity of their farms. In this instance as well, buyer networks are

important and Farmer three said that, “mi worry bout a buyer to come take it, and take it up,” meaning that he worried about vendors coming to his farm when the produce is ready, to buy it, and to take it to market. Lastly, Farmer two utilizes bridging capital to share ideas and techniques with other people living in and around the community and he “encourage dem to be a dedicated farmer.” Overall, the evidence suggests that linking and bonding capital are frequently used by successful households to gain access to information, technology, and financial capital and by the sharing of ideas and knowledge. Collectively, the key informants confirmed the importance of social capital diversity, because it helps farmers and fishers to be more productive, and successful.

Conclusion:

In conclusion, it appears that diversity is marginally related to household wealth measures when controlling for other household characteristics. Group diversity and wealth are positively related in the fishing occupation and inversely related in the farming occupation. Specifically, successful fishers are engaged in civic groups, while successful farmers belong to a narrower range of groups and are frequently engaged with a domestic group (i.e. banks and churches). It is possible that church networks serve as bonding capital for successful farmers and that the banks supply them with the necessary financial capital. However, more research is necessary to confirm this relationship. None-the-less, these diverging results suggests there are distinct livelihood strategies that are tied to group diversity and income levels. In fishing households, group diversity appears to be part of their income generation strategy.

Conversely, in farming households formalized group diversity decreases as income levels rise, thus suggesting that it is more of a coping mechanism for poor farmer households. This suggests that dual strategies are in play. The first trend shows that fishers, younger, and less educated households are more reliant on having a diverse set of group associations. The second trend is that farmers, older, and more educated households, are less in need of group diversity as their income levels rise. This is consistent with the key informant's diversity scores, which were all two or less, on a three point scale. This suggests that they are more dependent on other forms of social capital, such as bonding capital. The idea of bonding capital playing an important role in wealth generation is consistent with Bebbington's (1999) theory that suggests business transaction take place in close informal networks that are based on bonding and bridging capital. This is confirmed by the key informant findings that suggest that close relationships between families and friends play an important role in their occupational successes (i.e. close relationships determine who one does business with). Lastly, the key informant interviews help broaden the idea of social capital diversity and indicate that linking capital and bridging capital are important for younger households because they help them access productive inputs, technologies, and networks.

H3: Hypothesis:

Households that exhibit greater levels of trust of others, and institutions, will have greater levels of wealth.

This hypothesis is tested by looking at the trust levels of various groups and institutions that the participants of the study may encounter. Three measures of trust are used to measure three different dimensions of trust. The first measure is a trust index,⁶ which is composed of the bridging and linking capital that is provided through service providers. The second measure is trust in shopkeepers, which measures localized bridging capital. The last measure is trust in people from different socio/economic classes, which is a broader measure of the bridging capital that includes both people in and outside of the community.

Table 18 below tests the relationship between each wealth measure and the trust index scores. The scores range between one and five and a score of one indicates a low level of trust, three indicates indifference - neither trusting nor distrusting, and five indicates a high level of trust. The scores in this sample are relatively low, and when looking at house-size, there is a negative relationship between wealth and the mean trust index level. This idea is confirmed by Farmer three who reported that government agencies create financial disincentives to participate, as well as practice cronyism. These low scores are consistent with Wint, (2003) McConney et al, (2003) and Bowen (2009) who all suggests that a strong level of distrust in the government and outsiders is present in Jamaica and throughout much of the Caribbean region. Furthermore, these finding on distrust are consistent with moral economic theory, which is highly dependent on familial bonds for survival and wealth creation because there is often poor formal institutional support. (Scott, 1976; Bernal, 1994; O'Brien et al, 2000)

⁶ As was suggested Borton, and Pierce (2003), an extensive list of trust measures was narrowed by scaling and factor analysis in PAW. Five trust measures provide the highest Cronbach Alpha using scaling methods, and factor analysis produced the first dimension of trust. These trust measures included the following service providers: the local government, central government, teachers, Dr/nurses and the police. In addition to the trust index, factor analysis produced a second dimension, trustworthiness of shopkeepers.

Table 18: Household Wealth Vs. Trust Index

Occupational Income Vs. Trust Index						
	Level of Trust	1-2	2-3	3-4	4-5	Mean
Low-Occupational Income	<i>N = 12</i>	1	5	3	3	3.2
Medium-Occupational Income	<i>N = 13</i>	2	7	2	2	2.6
High-Occupational Income	<i>N = 11</i>	2	4	4	1	2.7
		5	16	9	6	2.8
House Size Vs. Trust Index						
	Level of Trust	1-2	2-3	3-4	4-5	Mean
Small-House	<i>N = 12</i>	1	5	5	1	3.1
Medium-House	<i>N = 14</i>	1	7	3	3	2.9
Large-House	<i>N = 12</i>	3	5	2	2	2.5
	Total	5	17	10	6	2.8

Trust in shopkeepers, relative to wealth is tested in Table 19 below. This measures the levels of trust of business people in and around the community (bridging capital). If a household is distrustful of local businesses, they are less likely to do business and use their services, thus making them more isolated and reducing access to goods, services, information, and technology. The trends in Table 19 are opposite of the trends in the trust index table. Here, higher levels of trust are associated with higher levels of wealth. In Table 19, only one of the wealthiest participants has a score of less than three, while the other wealth classifications each have approximately five participants each, with a score of less than three. The importance of trust in other business people (i.e. shopkeepers) is confirmed by many of the key informants who cited a number of ways that personal relationships with other businesspeople help them earn a living. For example, Fisher three said that his partnership with his boat captain was unique because, “we trust each other more and we work for a long, long time” together,

which allowed him to save up money and to buy his own boat. Other examples include the sharing of ideas and techniques, the sharing of business expenses, and the use of vendor/producer relationships to help expand buyer networks. Collectively, this suggests that there is a potential relationship between local business people and wealthier fishers and farmers.

Table 19: Household Wealth Vs. Trust in Shopkeepers

Occupational Income Vs. Trust in Shopkeepers								
		Level of Trust	1	2	3	4	5	Mean
Low-Occupational Income	<i>N = 13</i>		3	2	3	3	2	2.9
Medium-Occupational Income	<i>N = 13</i>		1	4	4	4		2.8
High-Occupational Income	<i>N = 12</i>			1	7	1	3	3.5
			4	7	14	8	5	3.1
House Size Vs. Trust in Shopkeepers								
		Level of Trust	1	2	3	4	5	Mean
Small-House	<i>N = 13</i>		3	2	4	3	1	2.8
Medium-House	<i>N = 14</i>		1	5	5	3		2.7
Large-House	<i>N = 13</i>			1	6	2	4	3.7
		Total	4	8	15	8	5	3.1

Trust in people from other classes, a broader measure of bridging capital is seen in Table 20 below. The strongest trend is seen in house-size, which has each level of trust rising as house-size increases. This suggests a possible connection because if a person is trustful of varying economic classes, then they potentially have friends and connections to people who are more financially well-off (i.e. points of financial access) and who often can provide better access to information.

Table20: Household Wealth Vs. Trust in Other Classes

Occupational Income Vs. Trust in Other Classes							
	Level of Trust	1	2	3	4	5	Mean
Low-Occupational Income	<i>N = 12</i>	1	3	6	1	1	2.8
Medium-Occupational Income	<i>N = 13</i>	4	3	3	1	2	2.5
High-Occupational Income	<i>N = 12</i>			7	5		3.4
		5	6	16	7	3	2.9
House Size Vs. Trust in Classes							
	Level of Trust	1	2	3	4	5	Mean
Small-House	<i>N = 12</i>	1	3	7	1		2.7
Medium-House	<i>N = 14</i>	2	3	5	3	1	2.9
Large-House	<i>N = 13</i>	2		6	3	2	3.2
	Total	5	6	18	7	3	2.9

Conclusion:

In conclusion, a strong trend between levels of trust in shopkeepers, and other classes is consistent with Van Staveren and Knorringa, (2007) Lackey et al, (2003) and Rao and Ibanez (2003) who suggest that trust of others is important in facilitating cooperation and trade between groups of people. However, the lack of trust in service providers and key informant responses suggests that the wealthier households are more comfortable with the bridging and bonding capital found between close friends and associates. Collectively, the data suggest that these informal networks facilitate trade, while service providers are seen as being distrustful and a hindrance to profitability. Conversely, poorer households have a more positive perception of service providers, which helps explain why they are more involved with groups such as the fisher Coop and the Parent Teacher Association. Hence, it is possible that Woolcock, (2001) Grant and Shillito, (2002) Wetterberg, (2007) and Dudwick et al (2006) are correct in suggesting

that (some) Jamaicans do use bonding and bridging capital as a coping mechanism to counter the environmental and economic shocks that they are facing. However, the data strongly suggests that the wealthier participants are using less formal forms of bonding and bridging capital, while the poorer participants are more reliant on the formal forms of linking and bridging capital via the service providers.

Controlling for Other Factors:

As seen in Table 21 below it does not appear that age, education, occupation, and house size are related to levels of trust. However, once these factors are controlled for, other trends begin to appear.

Table 21: Correlations of Household Wealth Measures

Kendall's Tau b	Trust Index	Trust Shopkeepers	Trust other classes	Age	Ed	Occupation	Household-Size
Trust Index	1.000	.024	.319*	-.083	.192	-.143	-.097
Trust Shopkeepers	.024	1.000	.365**	-.007	.117	.039	-.179
Trust Other Classes	.319*	.365**	1.000	.075	.100	.157	-.034
Age	-.083	-.007	.075	1.000	-.332**	.317*	-.246*
Ed	.192	.117	.100	-.332**	1.000	-.254	.223
Occupation	-.143	.039	.157	.317*	-.254	1.000	-.071
Household-Size	-.097	-.179	-.034	-.246*	.223	-.071	1.000

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

Table 22 controls for occupation, education, age, and household size.

Occupational-income and house-size was analyzed and show similar relationships with trust, hence only the relationship between house-size and trust is reported.

Controlling for occupation, two opposite trends are seen between fishers and farmers in relation to the trust index. Mean trust levels are positively related to fisher size of house, and negatively related to farmer size of house, despite the fact that total fisher and farmer sample means are comparable. Conversely, high levels of trust in shopkeepers and other classes have a positive relationship with high levels of wealth for both occupations. This means that both wealthier fishers and farmers trust shopkeepers and other classes more than their poorer peers.

Controlling for education, below-average participants trust index scores decreased as wealth increases, and trust of shopkeepers increased as wealth increases. No trend is found with other classes and below-average education, but there is a positive trend for above-average participants and increasing levels of wealth.

Controlling for age there is a negative relationship for above-average participants with wealth and trust index levels, and a positive relationship with shopkeepers. Additionally, trust of other classes has a positive relationship with both age groups.

Controlling for size of household, there is a positive relationship between trust in shopkeepers, and a negative relationship with the service providers.

Table 22: Controlling for Occupation, Age, Education, and Size of Household

Controlling for Occupation				Controlling for Education		
Fisher				Below-average		
	Trust Index	Trust Shopkeepers	Trust Other Classes	Trust Index	Trust Shopkeepers	Trust Other Classes
Small-House	2.7	2.9	2.7	3.5	2.3	2.7
Medium-House	3.0	2.3	2.5	2.4	2.5	2.5
Large-House	3.3	3.8	3.2	2.3	3.6	3.0
Total	2.9	3.0	2.8	2.6	2.9	2.8
Farmer				Above-average		
Small-House	3.8	2.5	2.7	2.8	3.0	2.7
Medium-House	2.8	3.0	3.1	3.6	3.0	3.3
Large-House	1.9	3.6	3.3	2.9	4.0	3.8
Total	2.7	3.2	3.1	3.1	3.2	3.1
Grand Total	2.8	3.1	2.9	2.8	3.1	2.9
Controlling for Age				Controlling for Size of Household		
Below-average				Below-average		
	Trust Index	Trust Shopkeepers	Trust Other Classes	Trust Index	Trust Shopkeepers	Trust Other Classes
Small-House	3.0	3.0	2.7	3.4	3.0	2.4
Medium-House	3.1	2.6	2.8	3.1	3.0	3.4
Large-House	2.7	3.8	3.5	2.1	3.8	2.6
Total	2.9	3.1	3.0	3.0	3.2	2.9
Above-average				Above-average		
Small-House	3.1	2.0	2.7	2.8	2.6	2.9
Medium-House	2.8	2.8	2.9	2.7	2.4	2.3
Large-House	2.3	3.6	3.0	2.7	3.6	3.6
Total	2.7	2.9	2.9	2.7	2.9	3.0
Grand Total	2.8	3.1	2.9	2.8	3.1	2.9

Conclusion:

Collectively, this suggests that there are distinct levels of trust found in relation to each control variable. Older participants, more educated participants, and smaller households consistently show a negative relationship between service providers and wealth, and a positive one between shopkeepers and wealth. This suggests that there are

distinct factors that vary with age, education, size of household, and with occupation. Moving from poorer, to wealthier, this means that older participants, more educated participants, and smaller households have declining levels of bridging and linking capital (i.e. trust index). Again, looking at the same group, as wealth increases, levels of bridging capital (i.e. trust of shopkeepers) increases. Most notable in Table 22, is the fact that higher trust index scores are associated with higher levels of wealth for fishers and that lower index scores are associated with higher levels of wealth for farmers. This suggests that farmers in the survey are more distrustful of service providers (potential bridging and linking capital) relative to the fishers in the survey. Lastly, fishers and farmers both have a positive relationship between wealth, other classes, and shopkeepers (bridging and linking capital). These polar trends in trust, centering on occupation is consistent with the results of the H1, H2, and the key informant interviews.

Thus, the idea set forth by Lackey et al (2003) and Rao and Ibanez (2003) that trust and cooperation leads to greater access to resources and income is only partially correct in this context. Their idea is consistent with fishers but not with farmers. Initially, the distrustful reaction of farmers and wealthier households suggests that the lack of trust in service providers (trust index) is potentially limiting their access to information, technology, ideas, financial capital and markets (i.e. customers). However, this index might not include the relevant service providers for farmers and it is likely, based on the key informant's extensive use of informal networks and business associates, that the relevant service providers are actually other business people (i.e. shopkeepers). In fact, all wealthier households are more trusting of shopkeepers (i.e. business people). This suggests that wealthier households are substituting one form of social capital (i.e.

formalized bridging and linking capital) with another form of social capital (i.e. the less formalized forms of bonding and bridging capital) to access information, technology, and to conduct business - which is consistent with moral economic theory.

H4: Hypothesis:

Households with greater levels of social capital will have greater levels of well-being.

Frey and Stutzer (2002) suggest that happiness is the best measure of well-being because it captures multiple dimensions of a person’s situation, including income, wealth, security, and health. The subjective well-being measure (happiness) is first compared with income and house size to see if there is a positive association between the two. The results in Table 23 indicate that size of house is positively related to level of happiness. Next, the correlations are run and the results are compared against the same social capital measures used in the H1-H3 hypothesis and no positive relationships are found with the social capital measures. Overall, levels of happiness are very high throughout the survey sample and an alternative measure with a wider range of responses is needed for the social capital comparisons.

Table 23: House Size Vs. Well-being (Happiness)

		Level of Happiness			
		3	4	5	Mean
Small-House	<i>N = 13</i>	3	2	8	4.4
Medium-House	<i>N = 14</i>	1		13	4.9
Large-House	<i>N = 13</i>			13	5.0
Total		4	2	34	4.8

Correlations with Social Capital:

Numerous well-being measures are tested with social capital, such as community connectedness, health, satisfaction with current income, and ability to support the family. Ability to support the family was found to have the most statistically significant relationships with social capital. Table 24 below, reports the significant relationships and shows a positive relationship with the number of people a participant talks to each week, which is a measure of bridging and bonding capital. This is consistent with the key informant interviews that collectively suggest that informal networks and relationships play an important role in accessing information, technology, financial capital, and potential customers. Table 24 also shows a positive relationship with total group membership (formal bridging and linking capital), group diversity (range of groups), number of times travel to another community (indicator of mobility and business activity), and how often they meet with people in a public space (bonding, bridging, and linking capital).

**Table 24: Correlations of Well-being Measures
(Ability to Support Family)**

Kendall's Tau b	Able to support family	# people talk to weekly	Total group membership	Diversity total	# times travel to a neighboring community in a typical month	In the past month how many times met with others in a public space
Able to support family	1.000	.383**	.389**	.348*	.251*	.267*
# people talk to weekly	.383**	1.000	.123	.134	.012	.067
Total group membership	.389**	.123	1.000	.802**	.259*	-.022
Diversity total	.348*	.134	.802**	1.000	.195	.036
# times travel to a neighboring community in a typical month	.251*	.012	.259*	.195	1.000	.194
In the past month how many times met with others in a public space	.267*	.067	-.022	.036	.194	1.000

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

Correlations with Trust:

When comparing well-being to the three trust measures (the trust index, trust in shopkeepers, and trust in others classes) no significant correlations are found.

Individually, ability to support the family was positively and significantly related to trusting the central government; happiness was positively related to trusting the police, and community connectedness was positively related to trust in the NPOs (i.e. Breds).

The fact that there is no significant correlation between the three trust indicators and well-being suggests that well-being is not related to a person's ability to trust in service providers, nor in people that have dissimilar professions or socioeconomic statuses.

Correlations With the Control Variables:

Table 25 below, reports the statistically significant control variables. The results indicate that a participant’s ability to support the family is greater for fishers and decreases with age, and increases with years of education. This relationship is contrary to formal measures of wealth that are tested in H1, H2, and H3. In those findings, farmers are more likely to have higher levels of wealth; older participants are more likely to have higher levels of wealth; and less educated people are more likely to have higher levels of wealth. Thus, the data suggests that this subjective well-being measure is capturing a broader dimension than occupational-income and house-size.

Table 25: Correlations of Well-being: Control Measures N = 38

Kendall’s Tau b	Able to support family	Participant occupation	Participant age	Years of education
Able to support family	1.000	-.434**	-.264*	.256*
Participant occupation	-.434**	1.000	.317*	-.254
Participant age	-.264*	.317*	1.000	-.332**
Years of education	.256*	-.254	-.332**	1.000
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Conclusion:

The data suggests that the alternative measure of well-being is capturing a broader set of factors than the wealth measures do. Overall, the participants rated their happiness levels extremely high. This is not surprising because Jamaica is a place that markets itself to the world as a place of sunshine and happiness. Add to this fact that Treasure Beach and the area has extremely low crime rates, and a better understanding of what makes Jamaica unique begins to emerge. These conflicting results of context (i.e.

economic and environmental shocks) and satisfaction (i.e. well-being) are represented in Table 26 below. Here it is seen that happiness and well-being are complex and relative ideas. While people are not satisfied with their current economic situation, those that have less (i.e. smaller houses) seem to be more content with what they have, than those that have more, thus suggesting a higher degree of contentment (i.e. well-being).

Overall, the data and correlations suggest that social capital and personal relationships play a more important role in fisher and farmer lives than the social capital measures used in H1-H3 indicate. The coupling of the key informant's responses and well-being responses offers more consistent parallels with the existing literature. Recall that all six of the key informants reported a strong connection between their family and friends (bonding capital) and success and that four of the six participants actively used bridging and linking capital to help grow their businesses. Next add to this the fact that ability to support the family is positively and significantly related to group membership, group diversity, sociability, and mobility, which strongly suggests that relationships play an important role in generating wealth. Now, Bebbington's (1999) theory that business transactions take place in close informal networks (i.e. bonding and bridging capital) is more clearly evident. Additionally, Narayan and Pritchett's (1999) theory that higher levels of social capital and human capital are jointly associated with wealth creation was also confirmed. Collectively, it is now apparent that well-being and success is a much broader and more complex idea than the current model accounts for and that a study of the multiple facets of well-being might warrant another paper.

Table 26: House Size Vs. Happy with Current Income

Level of Happiness		1	2	3	4	5	Mean
Small-House	<i>N = 13</i>	2	3	5	2	1	2.8
Medium-House	<i>N = 14</i>	3	5	3	1	2	2.6
Large-House	<i>N = 13</i>	4	3	5		1	2.3
Total		9	11	13	3	4	2.6

Chapter 6: Conclusion

Conclusion:

The H1 hypothesis regarding wealth and bridging and linking capital was found to be partially related to wealth creation. Key findings include a positive relationship between group membership for fishers and a negative one for farmers. In this study Bebbington's, (1999) Woolcock's, (2001) and Allison and Horemans's, (2006) interdependency between social capital and livelihood strategy was confirmed. Additionally, Narayan and Pritchett's (1999) co-relationship between social capital, human capital, and wealth creation was partially confirmed. Collectively, this study suggests that farmer households become less dependent on bridging and linking capital as wealth accumulates. However, it was found that bonding capital played a more important and diverse role than the simple shock reducing mechanism that the literature suggested. Bonding capital and close personal relationships helped foster human capital development, created access to financial capital, and provided the avenue for the dissemination of information, technology, and ideas. This suggests that bonding capital is more than the simple coping mechanism that Grant and Shillito, (2002) Wetterberg, (2007) and Dudwick et al (2006) suggested. Rather, bonding capital is a tool that successful households use in the establishment, development, and growth of a livelihood.

The H2 hypothesis regarding social capital diversity and wealth creation was found to be marginally related to wealth creation. Key findings include a positive

relationship between group diversity and wealth for fishers and a negative relationship for farmers, with fisher diversity being higher than farmer diversity. The diverging results also suggest there are distinct livelihood strategies that are tied to income levels. In fisher households, group diversity is part of their livelihood and income generation strategy. Dissimilarly, poorer farmer households appear to be using group diversity as a coping mechanism. Additionally, it was found that fishers and younger and less educated households are more reliant on group diversity, while farmers and older and more educated households become less dependent on group diversity as their levels of wealth increase. Later, when social capital diversity was expanded to include informal networks (bonding capital and bridging capital), an even stronger relationship was found. Specifically, it was found that close relationships between families and friends play an important role in household livelihood success, and helps determine potential customers and business associates. This finding was a confirmation of Bebbington's (1999) co-relationship theory between business transactions and informal social capital.

The H3 hypothesis found that trust perceptions of various groups and wealth was conditionally correct and found a strong positive trend between levels of trust in shopkeepers, other classes, and wealth. This finding is consistent with Van Staveren and Knorringa, (2007) Lackey et al, (2003) and Rao and Ibanez (2003) who suggest a positive relationship between trust of others and the facilitation of cooperation and trade. Dissimilarly, a negative relationship between trust in service providers and wealth was found. This distrust of service providers implies a strong aversion to formal forms of bridging and linking capital. After all, a household is not likely to seek advice, help, or resources from someone, or something that they do not trust. Collectively, this polar

relationship suggests that successful households are choosing to use informal networks of bridging and bonding capital (friends, family, and business associates) to facilitate trade. Conversely, poorer households are more trusting of service providers which suggest that poorer participants are more reliant on the more formalized forms of linking and bridging capital.

Again, as with H1 and H2, other factors such as human capital, occupation, and household capacity (i.e. size) were controlled for and it was found that the relationship between trust and wealth varies. The strongest trend was a positive relationship between wealth and service providers for fishers and negative relationship for farmers. These polar trends in trust, centering on occupation is consistent with the results of the H1, H2, and the key informant interviews. Hence, Lackey et al (2003) and Rao and Ibanez (2003) idea that trust and cooperation leads to greater access to resources and income, is conditionally confirmed for fishers and farmers, because they are likely relying on different forms of social capital to gain access to information and resources. In the case of farmers, the relevant service providers are not governmental agencies, but actually other business people (i.e. shopkeepers). This dichotomy fits farmers and fisher network structures. Farmers are more likely to conduct transactions with a number of businesses, both in and outside the community, because they have to buy seed, fertilizer, pesticide, and mulch, often through farm stores in larger communities. Fishers on the other hand, can purchase many of their supplies (i.e. fishing gear from the fisher Coop) and ice from the local ice house, thus suggesting a lesser need for mobility and a greater concentration of civic based networks inside Treasure Beach.

The H4 hypothesis tested and confirmed a positive relationship between social capital and success (i.e. well-being). Overall, happiness of the participants was extremely high, and an alternative measure of well-being, the ability to support ones family was selected. This hypothesis was confirmed and the many significant correlations between well-being and social capital suggest that social capital and personal relationships play a more important role in fisher and farmer lives than the social capital measures used in H1-H3 indicate. Similarly, Bebbington's (1999) co-relationship between business transactions and informal networks (i.e. bonding and bridging capital), was confirmed. Narayan and Pritchett (1999) joint theory that social capital (i.e. group membership and informal networks), and that human capital (i.e. education) facilitate wealth creation was confirmed as well. Lastly, it is clearly apparent that well-being (i.e. success) is a multidimensional factor, and that it warrants further inclusion in future studies of social capital.

In conclusion, this study found that bonding capital played a bigger role than the social capital literature suggested. Interestingly though, these findings are consistent with moral economic theory, which cites the importance of familial networks in generating income and household security. Specifically, the research found that bonding capital not only serves as a coping mechanism for poorer households, but it also provides a means to access technological information, financial capital, technology, and information. Overall, the data collectively suggests that the role of social capital is contextually tied to first occupation, and then secondly to human capital factors, such as age and education. This means that the livelihood strategies and the utilization of social capital will vary based not only on the occupation, but also on age and education. Most importantly, future

research needs to consider occupation as a control variable. Overall, the idea that social capital diversity helps create wealth was confirmed by the key informant interviews, which helped demonstrate the various uses for each type of social capital. While not all households used more than one type of social capital, all households attributed bonding capital in their success. None-the-less, most of the key informants used more than one type of social capital, and many of them were involved in some type of group, occupational, domestic, or civic. The idea that trust is related to wealth was confirmed by the fact that fishers and farmers belong to the various types of groups that they trust, either formal, informal, or both. Lastly, the idea of well-being helped broaden the idea of household success and helped confirm that social capital diversity is beneficial in wealth creation, but is not an absolute necessity. Meaning, that each successful household had found a way to make their livelihoods support their households, with each household using one or more forms of social capital.

Lastly, these contextual findings suggest that development efforts need to enlarge upon programs that directly address the needs of the targeted population, which vary by occupation, age, and education. For example, younger and poorer households often need access to financial capital in order to be more productive, but they cannot access it due to a lack of collateral, hence a need for microfinancing. Additionally, older participants often have less formal education, and could benefit from training in best business practices, in order to help better inform their production and livelihood decisions. Lastly, fishers could save money, fuel, and time by gaining access and training in GPS, which would improve livelihood efficiencies.

Limitations:

This study has its own set of limitations, as all studies do. In an ideal setting this study would have been replicated in multiple communities to see if the diverging trends of social capital utilization were also present. However, the situation did not allow for this to be accomplished. Such an opportunity at replication would help prove, or disprove this study's findings. This study aimed at capturing the breath of two different livelihoods, and thus random sampling was traded for purposeful sampling. None-the-less, there is no apparent bias in the results. While the survey provided a wide breath of information - contextually, a different case study method might have been more fitting. This study method was utilized for brevities sake, but ideally a few months' time spent in the field, would have helped in developing a more qualitatively rich measure. Culturally, the people have a strong oral tradition and a more ethnographic case study that utilizes group discussions and personal interviews might have been more revealing.

Turning to the key informant interviews, time and timing were a major constraint, and ideally more people would have been part of the key informant process. If time had allowed, the key informant interviews would have been written and conducted at a later date, once the initial survey data had been fully entered and analyzed, thus offering a richer array of qualitative explanations. For example, questions could have been uniquely developed and could have investigated the trust perceptions of various groups, (i.e. RADA, Women's group, and banks).

Additionally, there were limitations in measuring wealth in the study and no single measure was found. Income measures (short-term wealth) offered more consistent

relationships between bridging and linking capital, and size of house (long-term wealth) offered more consistent relationships to the subjective measures of social capital (i.e. trust perceptions and well-being). Ideally, a total household wealth measure could have been used; however income figures from other household members frequently were not available, although it obviously played a significant role in contributing to the households' finances. Also, better wealth indicators that capture household vulnerability could have been utilized to capture the varying wealth situations (such indicators could have included frequency of skipped meals, frequency of kids staying at home, and if their kids were able to attend a post-secondary school). In the future, conducting focus groups within the targeted population, before launching a survey, would be helpful in developing the best measures to differentiate between levels of household wealth.

Lastly, this study only captures one point in time, and its findings might not hold true, ten to twenty years into the future. Overall, this study adds to the body of literature, even though it was limited to one community and one culture, because it highlights the complexities that developers and policymakers must face in addressing poverty. Additionally, case studies such as this one, help illuminate the linkages between poverty and success, community and households, and between livelihoods. More studies, in other settings, using methodologies that capture the richness of context that is inherently tied to place, person, and livelihood, would further help inform and empower future development efforts.

Implications for Policymakers and Developers:

This study demonstrated that relevant programs already exist in Jamaica, and that programs need to focus on successfully and fairly connecting the available resources to the people who really are in need of them. While social, educational, technological, and financing programs are often available, issues of distrust need to be overcome. As was the case with the local nonprofit Breds and other local agencies, the population needs to be better informed about the programs being offered and how to access them. Effective communication is crucial, and better utilization of grassroots networks (i.e. frequent destinations such as the barber shop and churches) could improve the dissemination of information. However, special efforts are needed in order to reach the entire populace, because everyone does not have access to the same informal networks and not everyone in the community is literate.

This study also confirmed that a high level of distrust in governmental institutions, and institutions in general, is greatly limiting the potential benefits for fishers and farmers in Jamaica. It is exactly because of this distrust and the existence of weak formal institutions, that people are so highly dependent on bonding capital. None-the-less, the necessary political and organizational structure is there and there is a need for some type of a non-partial, nonpartisan liaison that could help foster greater levels of trust. Such a role could be filled by social workers and community organizers who could help bridge the gap between the available resources, information, and training in the populace.

These liaisons would serve two primary roles. One, liaisons would identify the needs of the people/community by spending a significant amount of time working in the

communities that they serve, and by building trust, relationships, and understanding (bridging capital). Two, liaisons would work with other organizations, and government agencies, while teaching and developing local leadership within the community, thus empowering the community and making developmental efforts more grassroots based (local) and more sustainable. Such a role could be filled by someone such as FFP, which has an extremely high trust rating in this study, or by local citizens that are highly trustworthy and respected by the communities in which they would serve.

Other key areas that played a role in fisher and farmer success were access to capital, technology, and training. One obvious tool to combat the lack of access to financial capital is the creation of microfinance programs that would help the poorer and younger households who lack the necessary collateral, so that they too can purchase supplies and inputs for their operations. In the case of the poor households, their social networks are frequently homogenous, meaning that their closest friends are poor too, and unable to lend money, as was indicated by the informal lending networks in this study.

However, there are some necessary components that help make microfinancing more successful. These issues largely revolve around trust. First, the potential borrowers have to trust the person/organization and be comfortable with the conditions and terms of the loan. Secondly, the loan agency needs to be able to assess the risk of each potential borrower, and they need to be able to have an enforcement mechanism that encourages high rates of repayment. Without either of these conditions, the loan agency cannot hope to have a sustainable future. Consequently, such an agency would need local residents to help monitor, enforce, and encourage timely and fair repayment of the loans

Additionally, the study revealed that there is a real need for some fishers and farmers to receive training. Training is important because human capital helps increase productivity and wealth, and Jamaica often lacks the formal institutions to address the specialized needs of fishers and farmers. In the case of the fishers, basic training in the utilization of GPS is beneficial because it helps fishers save time, money, and fuel. Furthermore, the fishers are highly vulnerable and often isolated at sea, and as a result could benefit from first aid kits, swimming lessons, and search and rescue training. However, even basic technology, such as two way radios are important in overcoming the isolation that makes emergency rescues at sea difficult.

As this study revealed, household compositions vary by occupation, wealth classification, age, and education, which imply a probable distinction in needs. For example, more educated and younger people often lack access to financial capital due to lack of collateral, which limits their wealth generation capacity. Conversely, the older and less educated participants are likely in need of other services, such as crop insurance, to help reduce environmental shocks. Crop insurance is an interesting option, but a multinational insurance agency is necessary in order to spread-out the risk of island wide payments, which would collapse a national system. As far as the structure of policy payments, a better option for crop failures might be a program that paid policy holders in inputs, such as seeds, which would allow farmers to start over in the event of a hurricane or drought. However, if such a program were to be administered, it would have to be run by a highly respected organization, and agents would be necessary in order to minimize fraudulent claims by policy holders.

Collectively, the contextual findings in this study suggest that programs created by governmental and developmental groups cannot be one size fits all. Developers and policymakers must really listen to the needs of the people and be able to understand systemic failures (i.e. lack of market linkages for famers). As was already said, trust is a major limiting factor and after talking with farmers and the CEO of FFP, it was found that current stocks of linking capital are not providing sufficient markets for farmers and fishers. In the case of farmers, there is a need for someone trustworthy to help organize the creation of farmer cooperatives that capitalize on the productive capabilities of farmers, especially small and younger farmers.

Currently, there are weak market linkages which results in a failure to effectively connect the producer with the fresh food markets and food processors. As a result, the frequent cycles of over production, and depressed market prices, and under production and high prices has led to an inconsistent supply for the processing facilities, and a lack of buyers for the farmers. Collectively, this implies a lack of market integration and synchronization between the farmer and their buyers and the need for a mediating body or organization.

Farmer cooperatives could fill such a role and would help stabilize the income for their farmer members. Ultimately, it is in the interest of the government and corporations (i.e. more business and tax revenue) to find new and larger markets for unique and high quality products that the farmers can profitably grow. Thus, there is a need to coordinate the processors and producers so that a high quality and readily available product is consistently available for local consumption and for product export. However, many parties would need to be involved to make such a venture successful. First, strong

nonpartisan leadership by a respected person or organization, which has a positive history of success, would be needed to overcome the issues of distrust that farmers have against formal organizations. Secondly, leaders in the farm sector would have to step-up, and be actively engaged in the formation of the cooperative, in order to encourage other farmers to join. Lastly, the government, (i.e. Ministry of Agriculture) and business leaders need to help create the new markets and processing facilities to take advantage of a more consistent and stable supply of produce.

Other Research Opportunities:

As with all research, this study collected a much broader set of data than was utilized in this study. Other paper and research opportunities are possible as a result of this data set. Other interesting studies include a comparative study of the livelihood strategies. A richness of qualitative data is also present and could help developers better understand the strategies that households utilize, and shed light onto why one household adopts one strategy, while another one might adopt a vastly different strategy. Other interesting opportunities from the data set include a comparative analysis between the different communication strategies by occupation and by wealth classification.

Additionally, inter-country comparative studies would be beneficial in the generation of new ideas and ways to address the lack of distrust and to create more cooperative partnerships between individuals, communities, and institutions. Historically, Barbados has had success in collaborative efforts between the government, private enterprise, and the public, which has helped foster a greater level of trust between each of the three parties.

Appendix I:

Social Capital Household Survey

Number _____	Age _____
Occupation _____	Sex _____

To begin, I would like to ask you some questions about your household and what they do. A household can be thought of as the people who have lived in your house with you, for more than 6 months in the past year. (how do you see your job, can it support you?)

Household Demographics

Years of education				Years in your occupation				Have you ever received training related to farming/fishing? From FFP, ministry of Ag, etc.			
How many people live in your household?											
Age	Gender		Relationship to you	Years of Education	What do they do?		Do they help out with your occupation?		Do they contribute financially to your household?		
	M	F					No	Yes	No	Yes	
	M	F					No	Yes	No	Yes	
	M	F					No	Yes	No	Yes	
	M	F					No	Yes	No	Yes	
	M	F					No	Yes	No	Yes	
Has your household experienced any financial or environmental hardships in the last few years, if so what?											

I would like to ask you some questions about how strongly you feel about Treasure Beach and your way of life. These questions will help me understand how attached you are the Treasure beach community and your way of life.

Sense of Well-being

Please indicate how much you agree or disagree with the following: <i>1 being strongly disagree & 5 being strongly agree</i>	Scale 1-5	N.A.
I am healthy		
Overall, I enjoy what I do		
I feel connected to my community		
I'm very involved with my church		
I am happy with my income		
I feel that I can comfortably support my family		
I often socialize with friends		
I often socialize with family		

Now, I will ask you about the people you talk to each week. These questions will help me understand the type of people that you communicate with.

Social Capital Networks (Informal Groups)

Community Networks	Response	
About how many people do you talk to on a weekly basis?		
Are the people you talk to...		
from the same livelihood? (fishing/farming) (i.e. agriculture)	no	yes
from the same religious group?	no	yes
from another group, please specify _____	no	yes
Are most of these people more or less as well off as you? 1 = lower, 2 = same, 3 = better (make more money or less) 4 = mixture		
Family Networks		
How many family members do you have in Treasure Beach that are not part of your household? (i.e. parents, brothers, sisters, cousins, grandparents)		
How often do you talk to these family members in Treasure Beach? (1 = monthly 2 = weekly 3 = daily)		
How often do you see most of these family members? (1 = monthly 2 = weekly 3 = daily)		

Now, I would like to ask you a few questions about how well people work together to solve problems. These questions will help me understand how people in Treasure Beach help support one another.

Community Collaboration		Scale 1-5
<i>On a scale from 1 to 5, 1 being very unlikely & 5 very likely...</i>		
How likely is it for people in Treasure Beach to help one another?		
How likely is it that the people will cooperate to solve a community wide problem, such as a water supply problem or a bad road?		
Support Groups		
If you had to suddenly borrow money, where would you get the money? <i>Please name the top 2 sources. (i.e. family, friends, lending institution "bank")</i>	1st	2nd
About how many people do you think are in each group that could help?		
If you had to suddenly leave home for a few days, who could you count on to watch your children?		
About how many people do you think are in each group?		
If you were going to build on to your house, (fix it up) who would you ask to help you?		
About how many people do you think are in each group?		

Now, I would like to ask you some different types of questions. These questions will be about the types of groups and organizations that you or your household belongs to, and will help me understand how you participate in your community.

Social Capital Networks (Organizations)

Type of Organization/Group	Name of Organization/Group	Role in Organization	Rank the top 3 most important organizations
<i>Do you or anyone in your household belong to a:</i>			
Farmer/Fisherman Coop or Group			
Neighborhood Committee			
Religious Group			
Identify with a Political Group			
Burial Society/Festival			
Finance/Saving Group			
Cultural/Music Group			
Education Group (PTA)			
Health Group			
Water/Waste Management			
Sports Group			
NPO/Civic Group (Breds)			
Other/Informal Groups _____			

*** Sections with asterisks were omitted from the survey database, due to a low response rate.

***Social Capital Characteristics	Group 1 The most important group for my livelihood is...	Group 2 The most important group for my household...
What is main your reason for joining this group? 1 = Improves my household's access to services 2 = Important in times of emergency 3 = Benefits the community 4 = Enjoyment/recreation 5 =Spiritual, social status, self-esteem 6= Improves my access to services/information for my business/livelihood 7 = Other, please specify _____		
Are most members of the group from the same... 1 = No, 2 = Yes		
Neighborhood/Village		
Family/kin		
Religion (church)		
Gender		
Age		
Nationality (where they come from?)		
Do members have mostly the same....		
Livelihood/occupation		
Education (business person, teacher, etc)		
Same income level		

***Does the group help your household gain access to any of the following services?	Group 1	Group 2
Education/training		
Health Services (help with medicine, learn about health, etc)		
Water Supply/sanitation		
Credit/savings		
Agriculture/fishing technology and inputs		
Irrigation		
Information		
Other, Please specify _____		
What do you learn by being in this group?		

*****Social Capital Diversity and Collaboration**

***Group Collaboration 1 = no, 2 = sometimes, 3 = frequently	Group 1	Group 2
Does this group work with other groups with similar goals in Treasure Beach?		
Does this group work with other groups with similar goals outside of Treasure Beach?		
Does this group work with other groups with different goals in Treasure Beach?		
Does this group work with other groups with different goals outside of Treasure Beach?		
Does this group work with any governmental groups?		
Does this group work with any NPOs/FBOs/Nonprofits?		
Does this group work with local businesses?		

Now, I would like to ask you a few questions about how much you trust different groups and their leaders. These questions will help me understand why you may or may not choose to interact with other groups and people.

Do you know many people who can influence your local government? (parish council)	no	yes	How much do you trust people from the following groups? <i>1 being very little & 5 being very much</i>	Scale 1-5	N.A.
			None – Jamaicans (foreign)		
			People from other classes (make more/less		
			Shopkeepers		
How much do local government officials listen to people's concerns?	Scale 1-5	N.A.	Local government (parish council)		
			Central government		
			Police		
			Teachers		
			Nurses/doctors		
			Tourists		
			NPOs (Breds)		
			Food for the Poor		

Governmental and Institutional Connections

Now, I will ask you a number of questions about how you communicate, and where you get different types of information. These questions will help me understand how you gather information, how you communicate, and what your most important sources of information are.

Communication Channels	Response	
How long does it take to reach the nearest post office? 1 = < 15 min, 2 = 15-30 Min 3 = > 30 min		
Do you read the newspaper? If so, how many times in the last month?		
How often do you watch the TV? 1 = Never, 2 = Monthly, 3 = Weekly, 4 = Daily		
How often do you listen to the radio? 1 = Never, 2 = Monthly, 3 = Weekly, 4 = Daily		
What is your preferred way to get the news 1 = friends/neighbors, 2 = radio, 3 = TV, 4 = newspaper, 5 = other _____		
How do you prefer to communicate? 1 = face to face, 2 = talking on the phone, 3 = texting, 4 = other, please specify _____		
How many times do you travel to a neighboring community in a typical month's time?		
In the last month, how many times have you met with people in a public place either to talk, or to have food and drink?		
In the last month, how many times have you visited people in their homes?		
In the last month, how many times have people visited you in your home?		
In the last month, how many times have you gotten together to play sports, dance, or for enjoyment		
How often do you use the following to communicate? <i>1 being never & 5 being very often</i>	Scale 1-5	N.A.
<i>Cell Phone</i>		
<i>Text Messaging</i>		
<i>Face to Face</i>		
<i>Computer/Internet</i>		
<i>Other</i> _____		

Please rank the 3 most important sources of information about what the government is doing? (i.e. ag extension, ministry departments, workfare, parliament...)		Please rank the 3 most important sources for market information? (i.e. jobs, market prices...)	
Relatives, friends and neighbors		Relatives, friends and neighbors	
Community bulletin board		Community bulletin board	
Local market		Local market	
Newspaper		Newspaper	
Radio		Radio	
TV		TV	
Groups/associations		Groups/associations	
Businesses associates		Businesses associates	
Community leaders		Community leaders	
Government agent		Government agent	
NPO		NPO	
Food for the Poor		Food for the Poor	
Internet		Internet	

Now, I would like to ask you a few questions about how much you trust your government.

These questions will me understand how these relationships have changed over time and how well these relationships work.

Governmental Transparency			
Compared to five years ago, has the honesty of local government: (parish council)	Deteriorated	Stayed the same	Improved
Compared to five years ago, has the honesty of national government:	Deteriorated	Stayed the same	Improved
Do people have to pay additional money to local government officials to get things done?	No	Yes, sometimes	Yes, frequently
Do people have to pay additional money to national government officials to get things done? (i.e. bribes)	No	Yes, sometimes	Yes, frequently
Are such payments effective in getting the service delivered, or a problem solved?	Usually not	Yes, sometimes	Yes, usually

Moving forward, the questions will focus more on your household and livelihood. I will be asking you questions about the type of things you own, such as your house, land, or other items. These questions will help me understand how your way of life provides for your food and shelter.

Wealth Indicators

Wealth Measures					
Do you own (or rent) property (land)?	Rent	Own	Neither	Other_____	
How many acres?		N.A.			
Do you own or rent your house?	Rent	Own	Neither	Other_____	
What type of house?	Wooden	Concrete		Other_____	
Number rooms in house:					
What Type of roof?	Zinc	Concrete	Metal Shingle	Other_____	
Type of flooring?	Wood	Concrete	Tile	Other_____	
Personal Indicators			Livestock		
	No	Yes		No	Yes/#
Do you have running water in your house?				Chicken	
Attached bathroom?		#		Goat	
Do you have a shower in your house?				Cow	
Do you a kitchen in your house?				Other	
Do you have electricity in your house?					
Do you have a TV ?		#			
Do you have DVD?		#			
Do you have cable? (satellite)					
Do you have a refrigerator?					
Do you have a gas cooking stove?					
Do you have a cell phone?					
Do you have livestock?					
Do you own a vehicle?		#			
Do you own a boat?		#			
Do you have a bank account?					
			Other personal property?		

Now, I would like to ask you questions about how you earn money and how your household is supported. These questions will help me understand the different ways that you and your family support and feed yourselves.

Production			
How many acres do you farm?			
What type of equipment do you use to farm/fish? Do you have enough gear/equipment? How many pots do you fish?			
How many people come on boat/work for you?(paid employees) How is the catch shared/how are they paid?			
Do you consider your operation successful?	no	yes	
What types of fish/crops/meat do you sell? Please name: <i>Include types of seafood/types of fruits & vegetables</i>	<i>*Toted on a yearly basis</i>		
How many lbs of each type of fish/produce do you sell weekly/monthly/yearly?	<i>*Toted on a yearly basis</i>		
What is the average price per lbs that you receive?			
How often do you sell in the market?	Never, Yearly, Monthly, Weekly		
Where do you sell your produce/fish?	COOP, Market, Vendor, Locally, Other_____		
What is name of person/group/market?			

Income Measures				
About how much does your household earn weekly/monthly/yearly from your occupation? (After expenses)	<i>*Totalled on a yearly basis</i>			
Does your household have other sources of income?	No	Yes	What are they?	
About how much weekly? (other)	<i>*Totalled on a yearly basis</i>			
Does your household receive payments from the government(pension)? If, so about how much?	No	Yes	Amount: <i>*Totalled on a yearly basis</i>	
About how much money does your household save each month?	<i>*Totalled on a yearly basis</i>			
Do family members not living with you send remittances (money) to help support your household?	No	Yes		
How often?	Yearly, Monthly, Other_____			N.A .
About how much?	<i>*Totalled on a yearly basis</i>			

May I call you for more questions? _____

Phone Number _____

Is there anything else you would like to add?
Thank you for your time and cooperation.

Appendix II:

Social Capital Key Informant Interviews

- 1) What do you think has made you successful in fishing/farming?
- 2) What do you think helped make you more successful than most others?
- 3) Do you think education and or training made a difference? How so? Where did you get it from?
- 4) Did you inherit land, or a boat? If so, do you think that is what made you successful?
- 5) Do you think groups or networks made a difference? If so, what kind of group or type of people was it? Who was it? ...a single person, family, friends, a particular group you belong to, a program
- 6) How has the group benefited you, or your family? Did it help you gain access to information, or resources?
- 7) Did your family help you succeed? How so?Information, opportunities, use of technology, lends you money?
- 8) Do you work with other captains/farmers, or share ideas, techniques, or technologies. What kinds? Has this helped you increase your income? How so?
- 9) Have you ever lived or been abroad? If you worked abroad, what made it possible? A family network? Has your experience abroad helped make you more successful? How so? Did it help you earn more money to support your family, or invest in your business? Did your experience abroad help you learn new skills or technologies that helped make you more successful?
- 10) After discussing all this, what is the most important factor in your success? Education, training, a certain group/organization, or group of people, time abroad, or family inheritance.
- 11) How has fishing/farming changed over the past 20 years? What do you think would make fishing/farming a more successful way of life for people in Jamaica?

References:

- Alison, E., and B. Horemans. 2006. "Putting the principles of the Sustainable Livelihoods Approach into fisheries development policy and practice." *Marine Policy* 30(6): 757-766.
- American Housing Survey - How American Housing Survey Data are Collected. Census Bureau Home Page. <http://www.census.gov/hhes/www/housing/ahs/datacollection.html> (accessed January 26, 2010).
- Bebbington, A. 1999. "Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty." *World Development* 27(12): 2021-2044.
- Bebbington, A., et al. "Exploring Social Capital Debates at the World Bank." *Journal of Development Studies* 40, no. 5 (June 2004): 33-64. Academic Search Premier, EBSCOhost (accessed November 11, 2009).
- Bernal, V. "Peasants, Capitalism, and (Ir)Rationality." *American Ethnologist* 21, no. 4 (1994): 792-810 . <http://www.jstor.org/pss/646840> (accessed December 1, 2010).
- Borton, and Pierce. 2003/2005 "SPSS Instructions." Psychology at Hamilton. <http://academics.hamilton.edu/psychology/home/SPSS.html> (accessed August 12, 2010).
- Bourdieu, P. "Les trois états du capital culturel." *Actes Rech. Sci. Soc.* 30 (1979): 3-6.
- Bowen, G. 2009. "Social Capital, Social Funds and Poor Communities: An Exploratory Analysis." *Social Policy & Administration* 43(3): 245-269.
- Chambers, R. 2004. "Ideas for development: reflecting forwards." Institute of Development Studies, IDS Working Paper 238.
- Coleman, J. S. "Social Capital in the Creation of Human Capital." In *Organizations and institutions: Sociological and economic approaches to the analysis of social structure*, 95-120. *American Journal of Sociology*, vol. 94, supplement 1988, 1988.
- CPI 2009 Table/2009/cpi/surveys_indices/policy_research. Transparency International . http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table (accessed November 18, 2009).
- Dasgupta, P. and I. Serageldin. 2000. *Social Capital A Multifaceted Perspective*. Washington D. C.: World Bank Publications.
- De Haan, L. J. 2000. "Globalization, Localization and Sustainable Livelihood." *Sociologia Ruralis* 40(3): 339-365.
- Diener, E., and Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. *Culture and subjective well-being*, 185-218.

- Dudwick, N., K. Kuehnast, V. Jones, and M. Woolcock. 2006. ANALYZING SOCIAL CAPITAL IN CONTEXT A Guide to Using Qualitative Methods and Data. Washington, D.C.: The International Bank for Reconstruction and Development/TheWorld Bank.
- Easterlin, R. (2003). Do aspirations adjust to the level of achievement? A look at the financial and family domains. In *Paper on the European Science Foundation Workshop on Income, Interactions and Subjective Well-Being*. OECD working paper series, No. 72.
- Eicher, C., and J. Staatz. International Agricultural Development (The Johns Hopkins Studies in Development). 3rd ed. Baltimore: The Johns Hopkins University Press, 1998.
- Fink, A. How to Sample in Surveys (The Survey Kit 7). 2nd ed. Thousand Oaks: Sage Publications, Inc, 2003.
- Flora, C.B. and J. L. Flora. 2008. Rural Communities: Legacy and Change. Oxford: Westview Press.
- Food For The Poor Jamaica - HOME. Food For The Poor Jamaica - HOME. http://www.foodforthepeerja.com/index.php?option=com_frontpage&Itemid=1 (accessed December 10, 2009).
- Fox, J. "POLICY ARENA: The World Bank and social capital: contesting the concept in practice." *Journal of International Development* 9, no. 7 (1997): 963-971.
- Frey, B., and A. Stutzer. *Happiness and economics: how the economy and institutions affect human well-being*. Princeton (N.J.): Princeton University Press, 2002.
- Godoy, R., V. Reyes-García, and T. Huanca." The Role of Community and Individuals in the Formation of Social Capital ." *Human Ecology* 35.6 (2007): 709-721. Jstor.Web. 12 Jan. 2010.
- Grant, J., and Shillito T. 2002. "Voices of the Poor: From Many Lands: Island in a Turbulent World (World Bank Publication)." Oxford: A World Bank Publication.
- Grootaert, C., Jones, N, D. Narayan, and M. Woolcock. Measuring Social Capital: An Integrated Questionnaire (World Bank Working Paper)." New York: World Bank Publications, 2006.
- Harriss, J., and P. De Renzio. "POLICY ARENA: Missing link or analytically missing?: The concept of social capital. Edited by John Harriss. An introductory bibliographic essay." *Journal of International Development* 9, no. 7 (1997): 919-937.
- Headey, B., and M. Wooden. "Melbourne Institute ."Melbourne Institute of Applied Economic and Social Research. <http://www.melbourneinstitute.com/miaesr/publications/working-paper-series/wps2004.html> (accessed October 13, 2010).
- Knack, S., and P. Keefer. "DOES SOCIAL CAPITAL HAVE AN ECONOMIC PAYOFF? A CROSS-COUNTRY INVESTIGATION." *The Quarterly Journal of Economics* 112, no. 4 (1997): 1251-1288. <http://www.mitpressjournals.org/doi/pdf/10.1162/003355300555475> (accessed September 13, 2010).
- Koss, R., Lonely Planet Jamaica. Oakland: Lonely Planet Publications, 2008.

- Lackey, S., D. Freshwater and A. Rupasingha. 2002, "Factors Influencing Local Government Cooperation in Rural Areas: Evidence from the Tennessee Valley Authority" *Economic Development Quarterly*, 12:138.
- Henry, P., and Conrad Miller. "Institutions versus Policies: A Tale of Two Islands." *American Economic Review: Papers & Proceedings* 99, no. 2 (2009): 261-267.
http://w4.stern.nyu.edu/aboutstern/publications/Tale_of_Two_Islands-AER.pdf (accessed July 1, 2010).
- McConney, P., R. Baldeo, M., Robin. "Guidelines for coastal resource co-management in the Caribbean: communicating the concepts and conditions that favor success." (2003). Caribbean Conservation Association (CCA)
- Narayan, D. and L. Pritchett. 1999. "Cents and Sociability: Household Income and Social Capital in Rural Tanzania." *Economic Development and Cultural Change* 47(4): 871-897.
- North, D. "The New Institutional Economics and Development." (1993).
- O'Brien, D., L. Dershem, and V. Patsiorkovski. *Household capital and the agrarian problem in Russia*. Aldershot: Ashgate, 2000.
- Osei, P. "A Critical Assessment of Jamaica's national Poverty Eradication Programme." *Journal of International Development* 14 (2002): 773-788. Wiley InterScience. Web. 12 Jan. 2010.
- "Population Census 2001." *Population and Housing Census 2001 - Jamaica*.
www.hist.umn.edu/~rmccaa/IPUMSI/CensusForms/North%20America/jm2001ef_jamaica_enumeration_form.en.pdf (accessed April 10, 2010).
- Putnam, R. D. 2001. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Putnam, R., L. Feldstein, and D. Cohen. *Better Together: Restoring the American Community*. New York: Simon and Schuster paperbacks, 2003. Print.
- Rao, V., and A. Ibanez. "The Social Impact of Social Funds in Jamaica A Mixed-Methods Analysis of Participation, Targeting, and Collective Action in Community-Driven Development." *Policy Research Working Paper Working Paper* (2003): 1-60. World Bank. Web. 22 Dec. 2009.
- Renard, Y. and V. Krishnarayan. 2000. "Participatory approaches to natural resource management and sustainable development: some implications for policy and research." Presented at the Regional Conference Managing Space for Sustainable Living in Small Island Developing States. Port of Spain, Trinidad and Tobago.
- Rupasingha, A., S. Goetz, D. Freshwater. 2000. "Social Capital and Economic Growth: A County Level Analysis" *JAAE* 32(3): 565-572.
- Scott, J. *The moral economy of the peasant: rebellion and subsistence in Southeast Asia*. New Haven: Yale University Press, 1976.

- Snyder, J., Glass, I., & Feltes, J. (2010). 4:10: Act Two. If You Were Stranded on a Desert Island and Could Only Bring One Economic Plan [Radio series episode]. In *This American Life*. Chicago, IL: NPR.
- Treasure Beach, Jamaica: A peaceful vacation destination on the Caribbean. Treasure Beach, Jamaica: A remote vacation destination. <http://www.treasurebeach.net/guide/> (accessed December 10, 2009).
- Urwin, P. G. Di Pietro, P. Sturgis, and G. Jack. 2008. "Measuring the Returns to Networking and the Accumulation of Social Capital: Any Evidence of Bonding, Bridging, or Linking?" *The American Journal of Economics and Sociology* 67(5): 941-968.
- Valdivia, C. "Agro-forestry Farm Survey 2004." Farm Survey from University of Missouri, Columbia, 2004.
- Van Staveren, I. and P. Knorringa. 2007. "Unpacking social capital in Economic Development: How social relations matter." *Review of Social Economy* 65(1): 107-135.
- Wetterberg, A. 2007. "Crisis, Connections, and Class: How Social Ties Affect Household Welfare." *World Development* 35(4): 585-606.
- Wint, E. "Social capital: red herring or right on? The Jamaican perspective'." *Development in Practice* 13, no. 4 (2003): 409-413.
- Winters, P., B. Davis, and L. Corral "Assets, activities and income generation in rural Mexico: factoring in social and public capital." *Agricultural Economics* 27.2 (2002): 139. Business Source Premier. EBSCO.Web. 26 Oct. 2009.
- Woodhouse, A. "Social capital and economic development in regional Australia: A case study." *Journal of Rural Studies* 22
- Woolcock, M. 2001. "The Place of Social Capital in Understanding Social and Economic Outcomes." *Canadian Journal of Policy Research* 2(1): 11-17.
- Yin, R. *Case Study Research: Design and Methods* 2008. Fourth Edition ed. Thousand Oaks: Sage Publications, Inc.