

Small-scale Fisher Livelihood Strategies and the Role of Credit In Paraty, Brazil

By

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A Thesis submitted to the Faculty of Graduate Studies of
The University of Manitoba
In partial fulfillment of the requirements of the degree of

Master of Natural Resources Management

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Management (M.N.R.M)

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Abstract

The Municipality of Paraty is home to dozens of small coastal communities, many of which depend highly on the land and sea for their livelihood. Small-scale fishers were the focus of the research and the communities of Tarituba, Praia Grande and Paraty were chosen as the study areas due to their high concentrations of fishers. The livelihood strategies of many fishers in the region have been constrained, due to the lack of credit for investment in higher forms of capital such as fishing gear, larger boats and ones capable of tourism transport. For many fishers, this has led to economic vulnerability. In order to raise incomes and fishing production, fisheries credit programs have been introduced in Brazil and utilized in Paraty to support investments among small-scale fishers.

The research was conducted in the Municipality of Paraty, within Rio de Janeiro State with the following objectives: (1) To determine the challenges that small-scale fishers face in terms of income generation; (2) To determine the livelihood strategies that fishers employ to decrease their economic vulnerability; (3) To establish how credit is used as part of the livelihood strategies of fishers; (4) To establish the supply and demand side challenges of credit provision; and (5) To offer recommendations that would improve credit outreach for fishers as well as foster sustainable fisheries management. Interviews were conducted in three fishing communities with full-time fishers, fish market owners, the National Program for the Strengthening of Family Agriculture (PRONAF) department of the Bank of Brazil and the fishers' association.

The livelihood strategies of fishers were closely related with economic vulnerability of the household. The more vulnerable fishers took part in strategies such as alternative marketing, which were based on an immediate need for income, versus the opportunistic strategies such as tourism development, which maintained great potential for those with physical and financial capital in the form of boats and gear and access to fisheries loans. Fishers relied on credit for important livelihood related purchases, such as

fishing gear, and boats; however, economically vulnerable fishers have experienced challenges obtaining loans. The demand for loans has not been met for the most economically vulnerable fishers, leading to constrained livelihood opportunities. Loans from government programs and fish markets have become increasingly inaccessible to economically vulnerable fishers. In addition, the Bank of Brazil's fisheries program PRONAF has become largely dysfunctional for small-scale fisheries in Paraty, due to its inappropriate guarantee system, excessive bureaucracy, high default rates, and its focus on fishers with higher incomes. The culture of self-sufficiency among fishers along this coast combined with sparse but good informal lending practices has led to the responsible use of credit, with low debt loads among households and low interest rates on loans.

For this reason, credit should be made more available for emergency asset repairs and replacement, and for investment in fishing boats capable of tourism activities. Fisheries and credit policies should consider livelihood opportunities, not solely fisheries development. In addition, they must take into account changes in the regional economy, from a natural resource base to service based economy. Paraty requires a multi-sector lender that operates under microcredit principles with an NGO partnership that may facilitate more effective and efficient bureaucracy, social guarantee systems, greater technical support and increased follow up. In order to address poverty and support fisheries, government programs must focus on supporting economically vulnerable fishers.

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List of Acronyms

CGAP	Consultative Group to Assist the Poorest
BRI	Bank Rakyat Indonesia
CODEVASF	Development Company for the Sao Fransico and Parnaiba Valleys
DANINA	Danish International Development Agency
DFID	Department for International Development
FAO	Food and Agriculture Organization of the United Nations
FIFO	Fisheries and Food Institute
FIPERJ	Institute of Fisheries for the State of Rio de Janeiro
IBAMA	Brazilian Institute for the Environment and Renewable Natural Resources
ICLARM	International Center for Living Aquatic Resources Management
ICSF	International Collective in Support of Fishworks
IDAF	Integrated Development of Artisanal Fisheries
IDRC	International Development Research Center
MAP	Marine Protected Areas
MFI	Microfinance Institution
MDG	Millennium Development Goals
NCA	National Constituent Assembly
NGO	Non-governmental Organization
NRI	Natural Resources Institute
OAS	Organisation of American States
PROGER	Program for Employment and Income Generation
PRONAF	National Program for the Strengthening of Family Agriculture
PT	Workers Party
ROSCA	Rotating and Savings Credit Association
SEAP	Special Secretariat for Aquaculture and Fisheries
SFA	Secretary of Fisheries and Agriculture
SSHRC	Social Sciences and Humanities Research Council
SUDEPE	Superintendency of Fisheries Development
SUS	Unified Health System
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nation Environment Program
TMAF	Traditional Management of Artisanal Fisheries
UNICAMP	University of Campinas, Sao Paulo
WFO	World Food Organization

Glossary of Terms

Caiçara	Mixed European-indigenous descendants that live along the Atlantic Forest Coast between the Paraná and Rio de Janeiro state
Defeso	Closed shrimp season currently from the months of March to May
Peixaria	Local fish market
Colonia de Pescadores	Fishers Association in Paraty

Chapter 1: Introduction

1.1 PREAMBLE

Fishers in the Municipality of Paraty in the state of Rio de Janeiro, Brazil, have been confronted with several challenges that profoundly affect their livelihood strategies; namely low fish prices, competition for fish stocks between industrial and artisanal fishing fleets, enforcement of Marine Protected Areas (MAP) in their traditional fishing spots and a lack of technical support in obtaining a means to invest in livelihood diversification either within the industry or into other sectors. Fishers demonstrated the need for credit sources, however, many lack the means to obtain loans. Some small-scale fishers were particularly vulnerable due to their low asset base, lack of options in other sectors, and poor organizing capacity within their communities. Sector-based credit programs have been implemented in many regions throughout Brazil in order to support small-scale fishers, however their effectiveness in assisting economically vulnerable small-scale fishers has been questionable. Policies to support small-scale fishers in Paraty would be vital in enhancing their livelihood strategies and would help fishers take advantage of emerging sectors and raise the value of their fish.

1.2 THE GLOBAL FISHERIES CRISIS

Fisheries sectors all around the world are currently facing a crisis, with resource depletion and over-exploitation across developed and developing countries alike. Vallejo et al. (2009) of The United Nations Environment Program (UNEP) state that the problem stems from a substantial increase in fish consumption and inaction by governments to regulate the sector in a sustainable manner. The United Nations Food and Agriculture Organization (FAO) cited by The Economist (May 21, 1998) stated that 35 percent of the main 200 global stocks were in decline, seven percent have collapsed and 25 percent have reached the highest possible level of extraction. In many regions anyone can fish, and some countries, such as Brazil and China, have quadrupled their fishing fleets in the last four decades and currently maintain plans to expand their fishing sectors despite a notable decline in marine resources (Corrente, 2010). A technique commonly used by governments to encourage the entrance and expansion of the fishing sector is through subsidies, and several authors including Munro and Sumaila (2002) have argued that a combination of subsidies and open-access often lead to resource over-intensification and

ultimate depletion, if not managed closely based on biological data and fisher voices of concern.

1.3 POVERTY AND CREDIT ACCESS IN RURAL BRAZIL

Poverty reduction and sectoral growth are two reasons for federal action in terms of financial support for fisheries. Brazil, for example, has been characterized by one of the most unequal income distributions in the world with one-third of the population considered to be below the poverty line (Kumar, 2005), many of whom are involved in fisheries and agriculture. Sector-based credit and microcredit have been available in Brazil for several decades, however, their growth has been substantial since the 2002 elections in which President Lula da Silva from the *Partido dos Trabalhadores* (Worker's Party) became the head of state of Brazil. Dozens of legislations were enacted and many others amended in recent years in favour of expanding financial services for the underserved, particularly in poor urban areas and in rural sectors such as fisheries and agriculture.

Access to credit around the world has received wide attention in recent decades due to the increasingly accepted belief that millions of low-income households lack the ability to reduce their economic vulnerability due their inability to invest in new forms of working capital that may generate additional income (Castillo, 2008). Considering this factor, credit provision to otherwise unreached low-income households remains a priority for many governments and non-government organizations (NGOs), along with the provision of savings and insurance options. Such services provide security of assets, assist in household risk management, and present opportunities for investments vital to livelihood diversification and earning potential (Barr, 2005). In addition, credit may facilitate a steadier rate of consumption, as resource abundance fluctuates throughout the year.

However, as banks operate for profit and seek to avoid risks, low-income households are generally underserved (Kumar, 2005). Banks most often require collateral and/or guarantors, prefer high income clients, and involve lengthy bureaucratic application processes. Those living in rural areas in Brazil face the greatest challenges in obtaining credit as there exist few bank branches outside of cities, and transaction costs are often too high for the borrowers and lenders to justify the process of obtaining and distributing small loans (Kumar, 2005).

Out of the 200 million people living in Brazil, only 70 million have bank accounts and out of the 5500 municipalities in Brazil, only 1700 have bank branches (Kumar, 2005). Credit directed at low-income households was available throughout the 1990s and earlier, however, the Lula Presidency beginning in 2002 accomplished some of the most notable changes in credit policy and expansion (Serpa, 2008). Despite the existence of public sector-based credit outlets in some rural areas, many of these programs often failed to improve credit access for the lowest income bracket and captured the wealthiest households in the region (Kumar, 2005). Kumar (2005) illustrates through a resource obtained from the Central Bank of Brazil the outreach of microfinance in Brazil in relation to other nations in Latin America (Table 1.1). Table 1.1 illustrates the largely unreached potential market for financial services in Brazil.

Table 1.1. Microfinance penetration in Latin America. (Source: Kumar, 2005)

Country	Estimated market size ('000)	Current clients	Market penetration rate (%)
Bolivia	232.3	379.1	163
Nicaragua	116.4	84.3	72
El Salvador	136.3	93.8	69
Paraguay	83.0	30.2	36
Peru	618.3	185.4	30
Chile	307.8	82.8	27
BRAZIL	7,875.6	158.7	2

Source: Kumar, 2005

Since 2002 Brazil has undergone many legislative changes regarding credit expansion in order to further reach the majority of the population which is underserved. (Serpa, 2008). The lack of technical financial support and high levels of bureaucracy within loan application processes have often forced households to endure long waiting periods before making potentially lucrative investments or before they may repair a non-functioning working capital item (Mezzer, 2002). Alternatively, family, friends, neighbours, middlemen, and business owners were examples of informal outlets commonly used in the rural sector whenever possible or when formal credit means are unattainable. Where social capital was strong within a community, money transfers were undertaken with zero interest being charged (Chowdhury et al. 2005).

1.3 BRAZILIAN FISHERIES

The fishing sector has been of major priority for the federal government of Brazil in the last several years, both in conservation and expansion, with new credit programs designed to encourage growth in the sector. Although most small-scale fishers in Brazil

operate on an individual basis, combined on a national level they often produced more catches than did industrial fishers (Wiefels, 2005). Figure 1.1 illustrates that in Brazil, small-scale fishers were responsible for 66 percent of all catches on an annual basis, but that their largest concentration existed in the northern region of the country. Small-scale fishers in the south and southeast of Brazil made up less than 20 percent of production as opposed to over 80 percent only 40 years ago (Wiefels, 2005). Salas et al. (2007) states that one of the greatest challenges facing small-scale fishers in Latin America and the Caribbean was the decline in fish catches due to the over-exploitation of fish by commercial fleets. They stated that earnings from the sector as well as government subsidized loans were invested in enhancing fishing capacity and efficiency among the larger scale fleets and have fallen victim to their own biologically destructive practices which have resulted in an increase in competition over a dwindling resource.

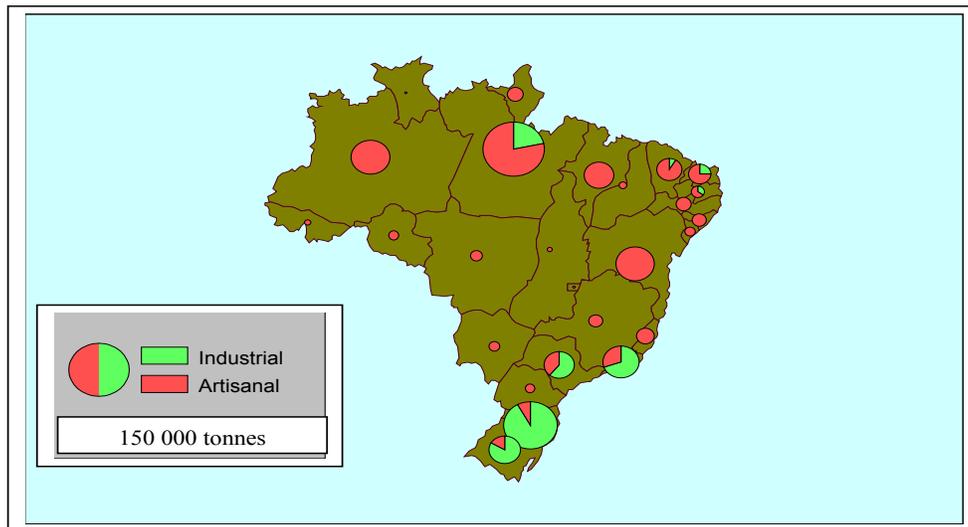


Figure 1.1. Artisanal and industrial fishing proportions in Brazil. (Source: Wiefels, 2005)

Earthtrends (2003) illustrated that marine fish catches steadily increased in Brazil throughout the 1980s, with a gradual decline in catches by coastal communities. Abdalla and Sumaila (2007) argued that fisheries subsidies provided to industrial fishers throughout the 1960s to the mid-1980s caused an increase in catches without an appropriate consideration for the long-term sustainability of the resource, resulting in decline in catches over recent years. They argued that current fisheries policies bent on expanding the fisheries sector were too optimistic regarding the abundance of fish and have not been accompanied by a management plan that is likely to solve the issue of over-exploitation. An article in *The Economist* (1998, May 21) argued that the

combination of ‘open-access’ and fisheries subsidies, if not accompanied by a functioning management plan, will result in over-exploitation. Kleih et al. (2003) argued that overfishing due to large commercial trawlers has been the principal culprit in the decline of coastal catches, along with the quantity of fishing boats, both small and large-scale with the ever more efficient and destructive fishing gear. Salas et al. (2007) argued that a major issue for small-scale fishers was that they could not compete in markets and that they maintained weak marketing power with few selling alternatives, leaving the small-scale fishing sector economically vulnerable in many locations.

1.4 BACKGROUND

The present research was part of an IDRC-funded joint coastal management project between the State University of Campinas (UNICAMP), Sao Paulo State, Brazil, and the Natural Resource Institute (NRI) of the University of Manitoba. Results from a background livelihood survey were published by Begossi et al. (2010) with the purpose of identifying challenges within the small-scale fishing sector in this region, along with possible new directions for research. Surveys were conducted in 34 communities in the Bahia Grande of which 13 were conducted in the Municipality of Paraty covering 206 households in total. Most of the communities in this region were characterized by inhabitants who identify themselves as Caiçara; the name for the mixed descendants of the Portuguese colonialists and Indian¹ populations who practiced resource extraction and production along the coast of Parana State through the state of Rio de Janeiro.

Themes within the livelihood survey included marine biological factors, education, health, natural resource use, income, public utilities, challenges faced by fishers, potential solutions to these issues among other themes. Results from the livelihood survey revealed that fishers in the Ilha Grande Bay identified several problems related to the management of the fisheries sector and that as small-scale fishers, they were increasingly disadvantaged at sea compared to large industrial sector fishing boats that trawled the sea bottom. Most small-scale fishers expressed a notable decline in fish catches attributed to various reasons but principally due to over-exploitation of marine resources by industrial and local fishing boats (Begossi et al. 2010).

¹ The term ‘Indian’ in the context of southeast Brazil context refers to the original inhabitants of this region before the arrival of Europeans.

The study by Begossi et al. (2010) revealed that fishers in Paraty varied in their use of technology, as some used canoes without motors while others used motors. Most fishers, especially those canoes not powered by motors, fished in waters near the communities from which they came and used several gear types including hook and line, gill nets, floating trap net and basic fishing nets, depending on species they intended on landing. Unknown, was how the varying levels of asset ownership and opportunities in other sectors represented the economic vulnerability of fishers and the livelihood strategies they implemented, such as their strategy in terms of fish marketing or their ability and need to access credit. Most fishers reported only consuming a small portion of their catch while selling the remainder to the fish markets. However, certain species were more commonly consumed while others were sold, possibly due to market values favouring some species over others. For instance, mackerel was generally consumed by fisher households, while sea bass and shrimp were sold in the markets (Begossi et al. 2010).

One of objectives of the survey in the Ilha Grande Bay was to determine the perceptions of fishers regarding current issues concerning marine access and management. Fishers reported that the use of trawlers by commercial fishers was the principal factor resulting in lower numbers of fish in the Ilha Grande Bay. Commercial fishers did not fish the waters near the communities, as the use of trawlers was prohibited within two miles off the coast. However, ecological studies on fish migrations on Brazil's coastline revealed that many species of fish did not migrate parallel to the coast but from shallower waters to deeper waters (Begossi, 2004). When the fish migrated out to deeper waters, trawlers captured large portions of them, and affected later catches in the bay near the communities. Other concerns included the high numbers of boats in the bay, lack of boat inspection, inappropriate technology (sonar), protected areas, the price of equipment and diesel, and climatic change. When asked to offer solutions to these problems, fishers expressed the need to create a fishing union, and higher control and inspection of fishing in the Ilha Grande Bay. Furthermore, many interviewees suggested increased support from the government and additional forms of credit for investments and boat repairs.

1.5 PURPOSE OF THE RESEARCH

The purpose of the research was to assess the credit needs faced by fishers, the options available to them, and how credit was incorporated into their livelihood strategies.

1.6 RESEARCH QUESTION AND OBJECTIVES

How do the credit options available in Paraty affect the livelihood strategies of fishers?

- 1.To determine the causes of economic vulnerability
- 2.To determine the livelihood strategies that fishers employ to decrease their economic vulnerability
- 3.To establish how credit is used as part of the livelihood strategies of fishers
- 4.To establish the supply and demand side challenges of credit provision
- 5.To offer recommendations that would improve credit outreach for fishers

1.7 METHODS

The research took a case study design while following the ‘advocacy and participatory’ research paradigm. The research project utilized both qualitative and quantitative survey instruments, seeking knowledge from the local inhabitants through the use of interview schedules, and a concentration on individual fishers, informal and formal lenders, the fishers’ associations and the Bank of Brazil. Data were collected from three communities and interviews were semi-structured for all participants. The interviews contained questions which informed the researcher on the challenges fishers face in landing and marketing fish, their credit needs, existing credit options and the challenges that they face when borrowing and repaying. A snowball sampling method allowed the researcher to identify key informants within the informal and formal credit sectors as well other informants from the fishers’ association and state government bodies. Fishers that considered fishing to be highly influential in their monthly earnings were selected, both those with fishing boats and those who work aboard larger crewed vessels. A Brazilian research assistant was selected and partnered with the researcher to assist in a portion of the data collection process. The field work of the project was approved by the Human Ethics Committee at the University of Manitoba.

1.8 STUDY RELEVANCE

It is understood that small-scale fishers face challenges and uncertainties, however, little is known about the effectiveness of credit in assisting fishers in generating more sustainable livelihoods. The study conducted in the Ilha Grande Bay and published by Begossi et al. (2010), though broad, did not include financial and economic factors

such as credit acquisition by small-scale fishers. In order to understand other factors that influence the level of economic vulnerability of fishers in Paraty, it was necessary to determine the challenges that fishers faced in generating a sufficient income with the fish they caught and to investigate into how credit in the region influenced the livelihood strategies of fishers.

A sharp increase in literature related to microfinance theory and government influence in credit provision in the Brazilian context has appeared in the last ten years, with Kumar (2005) leading the way in the discussion. This research was part of a growing body of literature related to the access to credit and financial services in Brazil, with an emphasis on government subsidized interest rates, public banks and third-party partnerships, social organization and group lending, and high rates of loan default. Despite noted failures experienced by purely sector-based public credit providers, several programs such PRONAF maintain lending practices that run contrary to local needs and this case study in southeastern Brazil provides insights regarding much needed policy changes required to improve fisher livelihoods and increase the access and relevance of credit in fostering a sustainable fishing sector.

1.9 THESIS ORGANIZATION

The thesis has been organized into seven chapters. A review of the literature related to fisher livelihood strategies and credit use will follow the introduction, and the research methods of the project have been explained in chapter three. The first three objectives of the project have been addressed in chapter four with the purpose of analyzing and discussing the decline of the fishing sector in terms of the types of livelihood strategies that fishers implemented as well as their need for credit and the applicability of sector-based credit programs in meeting their livelihood objectives. Chapter five addresses objective four regarding supply and demand side challenges in credit acquisition and repayment and takes sector-based credit and analyzes it in regards to its effectiveness in reaching economically vulnerable fishers. Chapter six puts the research into a larger context revolving around government policy and legislation related to poverty alleviation and credit expansion in Brazil, with an emphasis on program flaws among credit providers. Chapter seven offers a summary, conclusion and recommendations.

Chapter 2: The Challenges Small-scale fishing and the Issue of Financial Inclusion

2.1 INTRODUCTION

Despite great distances between continents, fishers from around the world have faced similar challenges in terms of access to the sector, income generation and access to and the use of credit. The purpose of this chapter was to critically review the literature related to these challenges that fishers faced in terms of accessing fish, marketing their product and obtaining credit, as well as the livelihood strategies that fishers use in order to reduce their economic vulnerability and cope with these challenges, with a final reference to some potential solutions. The chapter has been organized into three parts: i) challenges in marketing fish products and income generation, ii) livelihood strategies of fishers, and iii) challenges obtaining and repaying credit.

2.2 BENEFITS AND CHALLENGES OF SMALL-SCALE FISHING

Whether fishers ended up in the sector by “last resort” or by preference, Bene (2003) argued that fisheries provide a range of benefits for those involved that other sectors may not be able to provide. Some of the strengths of the fisheries sector referred to by Salagrama and Koriya (2008) include: a source of nutrition and food, a wide range of economic opportunities, multiple and renewable resources providing assurance of employment, a broad range in marine and coastal resources which provide multiple market niches, market demand and quick turnover allowing for daily cash intake, the open access nature of the resource which allows for free entry, and the informal organization of activities.

Some weaknesses in fishing sector expressed by Salagrama and Koriya (2001) included uncertain access to resources and technology, the open access nature which has resulted in competition and the decline in terms of trade for small-scale fishers, resource decline due to over-exploitation, perishability of the product resulting in quick sales decisions and a reliance on intermediaries, uncertain income in regards to fish catches, long supply chains which reduced the selling power of the fisher, the need for high investment and asset insurance resulting in indebtedness, seasonality which results in unemployment for part of the year, climate shifts and sudden weather shocks such as cyclones. Kleih et al. (2003) echoed many of the concerns of Salagrama and Koriya (2001) by stating that fishers faced many challenges in their livelihood such as declining

fish catches, disruption by natural disasters such as, cyclones and floods, a lack of capital, and a general lack of employment opportunities outside the fishing sector.

2.2.2 Fish Marketing of Small-Scale Fishers

Jacinto (2004) stated that fisheries value chains were inaccurate when presenting the real market value of the final products versus the actual market value. Hidden externalities within the value chain caused the price of the consumer product to appear inexpensive. With social and environmental cost missing from the value chain, an expensive and wasteful product sold for well under its real market value. The Cobb Douglas Function, which has often been applied by economists to determine the value of products, measures only labor and money. Wiefels (2005) stated that fishers faced a paradox when marketing their products whereby the price of the fish was inversely proportional to its freshness. The market value for fish was lowest immediately after the fish was caught, and as it moved through the distribution chain and lost its freshness and quality, the price of the fish increased. In obtaining a just price for their products, small-scale fishers often faced societal stigmas that affected their bargaining power. In many communities in Brazil, fishers were viewed as a lower class, due to their lack of livelihood options and education. On the contrary, the livelihoods of fishers were often diverse and include other forms of income generation; giving the impression that the fisher was not a professional in his or her work. Moreover, fishers often did not use good practices in maintaining the quality of the fish due to the lack of equipment and cooling mechanisms (Wiefels, 2005).

A study completed by Lem et al. (2004) revealed that fishers in the northern region of Vietnam have been coping with insufficient incomes due to their lack of marketing success. Fishers stated in interviews that there were too many individuals in the small-scale fishing market, who all marketed their products individually. Hernando (2005) stated that small-scale fishers in Visayan Sea have also experienced trouble marketing their fish due to a lack of fisher organization and cooperation. As such, fishers at the municipal level have had to settle for low prices in the markets, deal with narrow markets with few fish buyers, and employ poor marketing techniques. Hernando stated that small-scale fishers have suffered the most in regards to marketing due to fish prices being set by supply and demand. With their small economy of scale, fishers have experienced problems within the increasingly flooded fish markets.

Hernando (2008) stated that fishers, due to their lack of organization, have been forced to make some ‘back against the wall’ decisions. Low fish prices in many communities forced many fishers to leave the community in order to sell their product in other markets or higher in the supply chain in order to gain higher prices. This alternative marketing strategy resulted in high cost transportation and high rates of fish perishability. The Malaysian fisheries value chain presented by the FAO and INFOPECSA illustrated a simple example of how fish moved through the distribution chain beginning with the fisher’s decision to sell their product to markets or to individuals for higher prices (Figure 2.2).

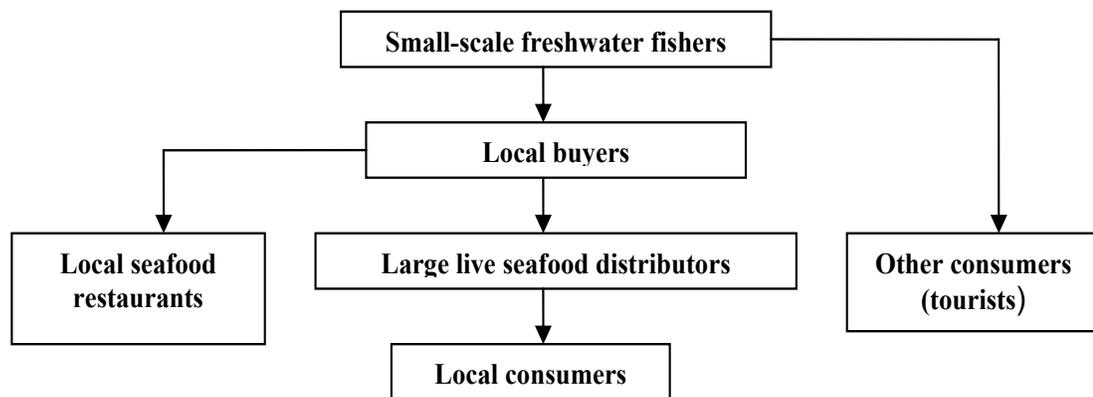


Figure 2.2. Fish marketing channel for small-scale freshwater fish capture in Malaysia. (Source: FAO and INFOPECSA)

Fishers recommended that the government regulate fish prices and adopt standardization methods using calibration scales, widen fish markets, and assist in the form of credit provision (Hernando, 2005). Recommendations from Hernando’s study included the creation of a cooperative fish market enterprise at the community level in which fishers would pool their resources to generate large-scale quantities and in turn capture a higher portion of the value. Fishers would be required to negotiate with one transporter and thus reduce the risks associated with individual marketing, for which extensive travel jeopardizes the quality of the fish products. Islam et al. (2006) stated as well through a study on small-scale fishers in Bangladesh that fishers who self organized, highly improved their marketing power.

Shrimp production in Bangladesh was comprised of a complex value chain in which two wholesalers were involved in collection, production, processing and sales of

shrimp, in combination with middlemen at every stage. Most shrimp farmers faced financial uncertainties and in order to purchase shrimp larvae from the middlemen between the fry collectors and shrimp farmers, they were required to borrow cash from the middlemen between shrimp farmers and shrimp buyers. Islam (2008) acknowledged that middlemen in this context were seen as a necessary evil, in which they provided services such as transport and loan delivery, but forced shrimp prices so low that shrimp farmers earned a meager wage. The FAO article by INFOPECA stated that in the context of Betume, Brazil, 14 women through the assistance of the federal government were able to organize themselves and create a processing station whereby they could fillet their fish and sell them to restaurants for three times their original market price and thus avoid the middlemen at the lower end of the value chain. The article noted that fishers in Brazil were fortunate to be organized into fisher colonies which contained the potential to assist fishers in their daily challenges, however, that sadly many fisher colonies have not reached their potential.

2.3 LIVELIHOOD STRATEGIES OF SMALL-SCALE FISHERS

Livelihood: *“The term livelihood attempts to capture not just what people do in order to make a living, but the resources that provide them with the capability to build a satisfactory living, the risk factors that they must consider in managing their resources, and the institutional and policy context that either helps or hinders them in their pursuit of a viable or improving living.”* (Source: Ellis & Allison, 2004)

In order to cope with many of the challenges faced by small-scale fishers caused by resource exploitation and weak marketing power, households have been required to make decisions regarding shifts into other sectors or regarding attempts to gain a share of their livelihood activity. Start and Johnson (2004) stated that diversification of livelihoods refers to the multiplicity of livelihoods within a household, or a sectoral change from one livelihood to another. Moreover, the temporal scale of livelihoods may be an important measurement of diversity, as activities may take place on the scale of one day, week, season, or year (Start & Johnson, 2004). Ellis and Allison (2004) emphasized that livelihood strategies often included several income sources in order to smooth household consumption due to the variation in resource availability by season and to reduce the risk that comes with natural resource based livelihoods. They argued that there

were challenges to seeking new forms of employment due to migration from home, security, working conditions, and lack of employee empowerment. On the contrary, new forms of employment often opened up new alleyways for income generation and acted as an economic safety net and coping strategy in the midst of current livelihood struggles. Brugere et al. (2005) presented a table that characterizes the factors at the household level that determined the rationale for livelihood diversification related decisions.

Table 2.1. Determinants of livelihood diversification at the household level. (Source: Brugere et al. 2005)

Livelihood strategy-related factors	
Perception of risk	
Migration	
Inter-generational investment	
Resource-related factors	
Factors related to human resources	- attitude and identity - education - technical skills - entrepreneurial skills - health
Factors related to social resources	- organisations, network and kinship
Factors related to natural resources	- agriculture and land - non-agriculture based activities, incl. fisheries
Factors related to financial resources	- diversity of financial resources - credit - wages - remittances - productivity and profitability - investment in growth
Factors related to physical resources	- household physical resources - infrastructural development

Bene (2003) stated that the small-scale fisheries sector in many developing countries played an important role in the socio-economic facets of the rural sector that was still poorly understood by academics and development practitioners. Since the mid 1980s researchers and authors such as Lawson (1977, 1983), Smith (1979) or Panayotou (1982, 1985), have played a major role in the creation of knowledge relevant to fisheries livelihoods, securities and income generation (Bene, 2003). Many development programs have originated out of these studies such as the International Centre for Living Aquatic Resources Management (ICLARM) in Asia, the Integrated Development of Artisanal Fisheries (IDAF) program implemented by FAO, the Danish International Development Agency (DANIDA) in West Africa, and the Traditional Management of Artisanal

Fisheries (TMAF) program funded by the Department for International Development (DFID) in Nigeria (Bene, 2003).

2.3.1 Fisheries as a Preferred or Last Resort Livelihood

Bene (2003) discussed past theories on fisheries as a possible livelihood of last resort for some, who may have been denied access to other forms of labour or physical capital such as land. The open access nature of fisheries offered a safety net to those with fewer assets and who did not contain any other livelihood options. Bene (2003) emphasized that not all small-scale fishers partook in the industry due to their lack of options elsewhere. Many fishers practiced fishing as a livelihood of choice due to their extensive experience in the trade, biological expertise and their love for fishing. Hill (2005) argued that fishing in many coastal regions was a sought after identity and that many individuals identified themselves as fishers despite rarely partaking in the fishing activities. The studies completed by Jacinto (2004) in the Philippines and Islam (2008) in Bangladesh, however, suggested a common conclusion: the majority of small-scale fishers in these regions fell under the lowest socio-economic level in their appropriate societies due to their lack of organization, assets, flexibility, and their high level of economic vulnerability.

Ellis and Allison (2004) stated that despite the view held by many researchers that small-scale fishing was the livelihood of last resort, it was not empirically proven that fishers were the poorest in their appropriate localities. Past views held that fishers practiced low level specialization and relied on fishing alone for their livelihood. It was later widely understood that small-scale fishers were often seasonal and took part in other sectors in order to supplement their livelihood in the event of cash shortages (Ellis & Allison, 2004). Brugere et al. (2008) cited IMM (2003) stating that short term migration amongst small-scale fishers to nearby communities for work or fish marketing was common, especially in the event of low fishing season, or low fish prices at local markets.

2.3.2 Constraints to Livelihood Diversification

Campbell et al. (2005) stated that fishers in coastal Cambodia fell under one of the lowest socio-economic classes in the country. For fishing households in Cambodia that relied primarily on fishing activities, diversification of their livelihood outside of fishing was often difficult due to their lack of land and assets. IMM et al. (2005) agreed by stating that livelihood diversification was a privileged strategy that only those with sufficient resources were able to undertake. In the case of artisanal fishers in Cambodia,

livelihood diversification was constrained due to landlessness, which in turn made it difficult for fishers to access credit in order to invest in other activities (Campbell et al. 2005). If the head of the household fished as their main source of income, they were likely to diversify within the fishing industry as a labourer on a commercial fishing boat or as a small boat owner. For households that were less dependent on marine resources, diversification out of the fishing sector was more common in, for example, cattle grazing and agriculture (Campbell et al. 2005). According to Salagrama and Koriya (2008) those households that were highly invested in fisheries, were most likely to remain in the sector and diversify within it, due to their lack of viable options outside the sector.

2.3.3 Implications of Fisheries Livelihood Diversification

Brugere et al. (2008) stated that traditional government schemes in an attempt to assist and professionalize small-scale fishers have offered subsidized investment loans for increasingly technical fishing gear that has counter-productively locked fishers further into a potentially declining industry. Salagrama and Koriya (2008), however, argued that although fisheries on a global scale has been faced with issues of sustainability, competition, and over-exploitation, these challenges were not a result of the weakness in the industry itself, but the lack of institutions and policies governing and ensuring the sustainability of fishing. They stated that instead of moving people out of the sector, to which they may not find quality alternatives, the fishing industry required a new level of organization that could foster livelihood enhancement and diversification strategies.

Brugere et al. (2008) citing Allison and Ellis (2001) stated that livelihood diversification may reduce pressure on the fish resources during low seasons by providing options outside the sector, while Pauly (2006) argued that high income seasonal livelihood options outside of fishing may promote greater investment in the fishing sector, thus contributing to further resource decline. Hill (2005) stated as an example that, fishers involved in ecotourism in Mozambique were more likely to invest their additional earnings outside the fishing sector in a slow attempt to diversify out of fisheries. Salagrama and Koriya (2008) stated that livelihood enhancement has been utilized as a livelihood strategy for fishers within the fishing sector, in order to capture a greater portion of the fish value chain. However, low income fishers were often disadvantaged at sea, where the more privileged fishers were using higher technology, and at the shore, where the small economy of scale of artisanal fishers gained them a low comparative wage to larger-scale fishers. There was, however, an element of risk in

obtaining access to higher technology, due to loan repayment and maintenance issues, and many fishers have reduced their assets, settling for less money and less risk (Salagrama and Koriya, 2008).

2.4 CHALLENGES OF CREDIT ACCESS AND WEAKNESSES IN CREDIT POLICY

“I did something that challenged the banking world. Conventional banks look for the rich; we look for the absolutely poor. All people are entrepreneurs, but many don't have the opportunity to find that out.” (Source: Yunus, 1999)

Many small-scale fishing sectors around the world have been faced with the challenges of competition; characterized by weak market power and a lack of quality working capital. Emphasis by many governments in addressing these challenges has involved the introduction of credit programs that would enable fishers to invest in new technologies in order to increase their production in the fishing sector or begin prospects in other sectors. The final theme of this chapter presents literature that discusses the challenges that fishers face in obtaining access to and repaying loans, and the institutional challenges that have led to difficulties in banking the fisheries sector. Topics in this section include the challenges and benefits of informal credit schemes through middlemen and buyers as well as benefits and challenges experienced in attempting formal loan acquisition through banks. Literature that offers recommendations to these issues follows.

2.4.1 Credit Distribution in Brazil

A large survey by Kumar (2005) on access to financial services in Brazil noted that a lack of access to formal institutions presented challenges for both low income rural and urban residence, but that the rural sector faced greater issues that set itself apart from the urban sector. Physical isolation from banking institutions played a significant role in the struggle for financial inclusion. Low-income households were difficult clients for banks due to their lack of creditworthiness, lack of physical collateral, their isolation, frequent inability to repay loans and high cost of operating such loans (Kumar, 2005). Kumar stated that public sector-based credit programs have suffered in regards to credit expansion due to their low profit margins from loans. Three principal reasons were noted

as the causes for low profit margins; first, loan officers were required to travel to remote regions to acquire information and creditworthiness of potential clients. Second, reliable personal information acquisition was laborious as most rural livelihoods and enterprises fell under the informal sector, making it troublesome to note the precise income of a household as well as business records. Finally, interest rates were forced so low that the distributed loans did not cover the cost of extending them.

According to a study completed by Mezzera (2002), the informal sector in Brazil was growing rapidly while formal sector employment was declining, reducing the ability for banks to obtain information on potential borrowers. Almagro and Fiestas (2003) who focus on microfinance in Latin America agreed that lower income households faced several limitations in obtaining credit due to their lack of formal income sources, often low education and few assets which limit their prospects for obtaining credit.

Despite the challenges faced by the formal banking sector in providing loans to low income households in Brazil, Kumar (2005) argued that informal credit sources were responsible for placing extremely high interest rates on low-income persons and took advantage of their desperate need to borrow. Kumar does not maintain that subsidized formal sector loans are the answer to this issue, but rather loans that cater to low-income households without a motive of trapping the household in debt. Tietze et al. (2007) and Barr (2005) presented similar results as Kumar stating that formal institutions that target the fisheries sector and low-income households need to charge market-oriented interest rates in order to cover the costs of loaning and remain sustainable over the long-term. Brazilian banks need to cater more effectively to low-income households by offering more basic and cost effective bank accounts with special documentation requirements for lesser educated clients. As well, financial education is of increasing importance for lower income borrowers at formal institutions, despite education falling outside the mandate of public banking institutions (Kumar, 2005).

2.4.2 Formal versus Informal Loans

Von Pischke et al. (1983) in their critique of credit programs aimed at the rural sector stated that public banks are not careful enough in generating loan schedules for low-income borrowers who are involved in unpredictable primary resource production. They argued that loan amounts are often determined by an optimistic wage and do not take into account unintended outcomes such as resources fluctuations and environmental shocks. Moreover, they stated that the formal structure of the loan did not match the

unpredictable structure of the rural sector. In addition, these authors argued that development organizations and governments emphasize credit and loans as a panacea for rural development and poverty alleviation, although debt is so often seen as negative. Advocates for special credit programs often did not advise that imposing more debt on low-income households may not contribute to further income generation. Von Pischke et al. (1983) argued that low product prices and expensive inputs were often major factors in low income generation; however, credit was often seen as the solution. Roth (1997) echoed this notion by stating that credit provision for low-income households often treated the symptoms of underlying problems rather than addressing the deeper issue at hand such as powerlessness and market failure. A study by Mosley (2001) conducted in Bolivia revealed results which back up current skepticisms regarding the effectiveness of formal credit in increasing the income of the most vulnerable households.

Author of 'Microfinance and Poverty in Bolivia,' Mosely (2001) stated that Bolivia has become an example of a strong credit provision that rivals any other in Latin America, and has been successful in serving households living in extreme poverty. Despite its accomplishments, serving low-income households has meant encountering certain challenges regarding successful repayment by clients and serious risks at the household level. Mosley stated that the poorest households often rush into capital investments due to their urgent need to raise their income level without considering the best capital options available, while others used their loans to meet immediate consumption needs without providing themselves a way to generate the cash needed to repay the loan. Salagrama and Koriya (2008) noted this phenomenon amongst fishers in India and argued that many credit programs have only contributed to further household debt.

Mosley argued that coping mechanisms for loan repayment were particularly limited for the poorest households and often led to damage in income generating prospects resulting in a regular selling off of assets, and reduction of child education. The most successful household borrowers included those that were more flexible in terms of decision- making time, and those that contained savings. Chowdhury et al. (2005) stated that defaulters often, in the attempt to overcome their debt burden, continued borrowing from alternate sources in order to payback previous loans, which has resulted in a shift in household emphasis from income generation to loan repayment. Chaudhury et al. (2002)

noted that in the context of Bangladesh, multiple memberships among MFIs has become common despite policies intended at discouraging such practices.

The informal credit industry has received a negative reputation in development circles due to the high interest rates charged and the informal lender's frequent ability to trap borrowers in a cycle of financial dependence (Kumar, 2005). Srnec and Herkrilk (2005) stated that in some contexts these allegations have proven themselves true, however, that informal lenders may play a crucial role in rural credit delivery and perhaps in manners more conducive to the livelihoods of rural dwellers. Srnec and Herkrilk (2005) emphasized that high interest rates charged by informal lenders were often attributed to the short time span of a loan, as well as other convenience such as close proximity to the borrower and flexible repayment schedules. For example, if an individual borrowed \$2.00 in the morning at an interest rate of 25 percent in order to buy four watermelons, but then cut the melons into 40 pieces and sold each piece for 10 cents, the borrower will have earned \$1.50 (interest factored in) by the end of the day and earned almost a 70 percent profit. In this case, the lender would often be accused of exploiting the borrower by charging high interest, but the borrower would be praised for their entrepreneurial skills and innovation (Bouman, 1990). Roth (1997) demonstrated similar views through a critique on formal credit sources, stating that informal lenders often charged higher interest due to the uncertainty of lending in a high risk sector.

Bouman (1990) stated that informal lenders were in some contexts individuals operating alone; however, many operated as groups of individuals organized as Rotating and Accumulating Savings and Credit Associations (ROSCA), or were organized as partnership firms such as indigenous banks. The lack of bureaucracy and formality and close proximity to borrowers often granted informal lenders a comparative advantage over the formal sector (Bouman, 1990). Formal credit providers in Latin America, such as public and private banks, have struggled to provide services that are conducive to small-scale, dynamic and heterogeneous activities found in the informal sector (Almagro & Fiestas, 2003).

Despite the existence of formal sector credit institutions in developing countries, many regions maintained a high level of informal sector lenders that exist alongside formal institutions. A case study in Pura, Peru by Guirkinger (2008) illustrated this co-existence, as households from the far north often relied on expensive informal sources of credit, while formal institutions were operating in the same region. Guirkinger proposed

two possible reasons for informal sector preferences. First, informal credit sources were seen as a last resort for those who could not obtain credit from the formal sector, and second, many agriculturalists preferred to borrow from the informal sector due to lower transaction costs and high repayment flexibility.

Costs over the loan term were determined by the punctuality of repayment by the borrower. In the case of Pura, Peru, defaulted formal loans were frozen at the end of the original term, while formal loans continued to collect interest and incur penalties. If the borrower was punctual in their repayment of loans, formal credit was cheaper. However, if they were late in repayment, informal loans were cheaper. If the borrower suffered losses due to external shocks as a result of natural disasters, they were better off with an informal loan. Loans from friends and relatives were not only bureaucratically simpler, but also cheaper than formal credit.

Informal lenders were generally near in proximity to the resource user and often involved in the same industry. For this reason, moneylenders and middlemen maintained an advantage over formal credit providers in that their proximity allowed them to monitor more closely the borrower and determine whether the borrower was likely to repay the loan (Guirking, 2008). Moreover the informal lender was usually very knowledgeable in the borrower's field of work, and better understood the needs of the borrower, including the quantity of cash the borrower required. In the event that the borrower could not repay, the lender who was engaged in other activities within the community would possibly understand the borrower's circumstances and devise another repayment schedule (Guirking, 2008).

A study conducted by Hernando (2005) in the Visayan Sea, Philippines, revealed that most small-scale fishers in this region obtained credit from informal moneylenders, the majority of which were fish buyers. Hernando revealed results regarding informal lenders that went contrary to most literature containing data on informal lending practices. Many informal lenders in the Visayan Sea did not charge interest on loans to fishers, making their already simple lending process more appealing. Hernando suggested through evidence from other relevant literature (Morato, 2000) that there was possibly still a demand for loans at commercial interest rates. Subsidized interest rates were not required to attract clients in the fishing sector, nor to ensure their timely repayment. Hernando stated that cooperatives and banks alike have struggled to provide quality technical services due to interest rates that do not cover the cost of small loans.

Over 90 percent of recipients of formal loans in the Visayan Sea stated that their loan was not accompanied by any such technical assistance. Since informal lenders could not be expected to provide such services, an alternative credit program for fishers required a focus on providing technical services that could provide financial education to borrowers on how to manage their loan, maximize the benefits of the borrowed credit and provide for timely repayment on the loan. Small-scale fishers stated that they desired a formal provision of credit directed toward small-scale fisheries used to maintain and purchase fishing gear, acquire new capital and to partake in other fishing operations (Hernando, 2005). The majority of fishers stated that they took loans on an irregular basis and only when the need arose in order to replace old and worn fishing gear, however results showed an overall high demand for small loans.

Hernando observed that the main issues that arose among fishers regarding formal credit services was the lack of existence of a credit service for small-scale fishers, and that the existing formal options contained rigid repayment schedules that were not realistic for the fishing sector. Fishers in the Visayan Sea stated that the difficulties in repaying loans were one of the greatest reasons for avoiding them. Hernando argued that government programs required a greater focus on promoting savings if fishers take loans, in order that fishers improve their domestic economic strategies and do not become dependent on government loans for all purchases. Kleih et al. (2003) as well argued that credit for coastal communities required rethinking with a higher emphasis placed on finance than credit.

Lem et al. (2004) stated in the context of Vietnamese fisheries that, government credit sources were also perceived as isolated and difficult, and were only accessed if larger loans were required over the medium or long-term. Fishers explained that difficulties in obtaining and processing formal loans resulted from the need for collateral, lack of knowledge of loan procedures, short and uncompromised repayment policies and intervals, and a lack of opportunity to take a second loan. Informal loans were used extensively by fishers but at limited amounts and high interest rates, thus not facilitating vertical progress within the fishing sector. Twenty-five percent of fishers stated that they would like to take a medium term loan from a formal credit source in the future (Lem et al. 2004).

2.4.2 Suggestions for Fisheries Based Credit Providers

Lem et al. (2004) suggested that formal credit played a significant role in capital investment, while informal credit and credit in kind for ice and diesel played a much higher role in working capital requirements. The country of Vietnam has experienced a large gap in knowledge on supply and demand of credit, with the central region suffering the most. These authors argued that formal government lending needed to cater to working capital needs in addition to large capital investments and thus become more accessible in the immediate region. Application procedures needed to be simplified and information on loan repayment procedures, terms and conditions and privileges of borrowers required a higher degree of availability. Tietze et al. (2007) stated that formal credit providers were extremely disorganized and did not properly screen borrowers beforehand or monitor their investments. Lending agencies took a multi-institutional approach, using associations and government organizations to take part in processing loans. These agencies often lacked co-ordination leading to a lack of follow-up on loan defaults. Moreover, subsidized interest rates were so low that many fishers viewed the loan as more of an eventual grant leading to their lack of repayment. Tietze et al. (2007) argued that formal lending agencies required a greater understanding of the fishing sector in order to successfully cater well to potential borrowers. Salagrama and Koriya (2008) agreed and stated that, in coastal India financial support for fishers existed in a great capacity, however, credit providers demonstrated a weak understanding of fishing.

The FAO Workshop on Fisheries Credit Development for Eastern and Southern Africa presented results that echoed many of the above mentioned concerns. Principal results from the discussion maintained that institutional disorganization, unqualified staff, and a lack of technical support for fisheries loans resulted in low levels of loan recovery. Other issues included strict and uncompromised repayment schedules that did not take into account the seasonality of fishing, as well as subsidized interest rates that led many fishers to confuse their loan with a grant. The report from Malawi revealed that the fisheries sector received a very poor financial reputation due to high rates of loan defaults and that several institutions have refused to finance the sector. The reaction was unfortunate as credit was seen as one of the most sought after services amongst fishers in this region. Tietze et al. (2007) emphasized that the Asian experience with credit for fishers has taught that repayment policies need to cater more to the seasonality of fishing,

in order to avoid cash build-ups during high season and low amounts in the off season, leading to a lack of savings and increased loan defaults.

The complete lack of formal sector finance for the inland fisheries sector in Zambia was believed to have led to stagnant growth in the sector (Copesake et al. 2000). Informal lenders were common but only effective in so far as providing small loans with short repayment schedules. The Zambian Development Bank has provided some loans to the fisheries sector but repayment rates were low and institutions were isolated. The Department of Fisheries was blamed for the poor credit available to small-scale fishers in part due to its lack of initiative in organizing fisher communities into credit cooperative groups. The FAO article by INFOPECSA (2008) stated that fishing communities required credit provision through community-based organizations rather than formal banks, as well as village level savings associations accompanied by training on savings schemes that may promote the importance of savings for decreasing economic vulnerability.

An article by Nije (2002) revealed several challenges that fishers faced when attempting formal loans in the Gambia. Formal credit programs dedicated to the fishing sector existed for some time, however, few fishers noted benefits from such programs. Fishers in the Gambia were required to raise a down payment of 20 percent on the loan and find a co-signer as a guarantee. Both of these requirements proved infeasible for most fishers, leading to new ideas for small-scale fisheries finance.

Nije (2002) stated that ROSCAs were developed among agricultural communities in the Gambia in the 1980s. The associations were a major success and membership across the country has surpassed 120,000 low-income households and are now supported by the Central Bank as rural financial institutions. In addition to providing loans and mobilizing savings, the ROSCAs provided technical loan support to its members and provided emergency loans for health and education. The cooperative experienced a 98.5 percent repayment rate which was owed to the high level of social collateral and social obligation within the organization as a result of group lending.

Kleih et al. (2003) argued that the policies of current financial programs aimed at the small scale fisheries sector do not match the characteristics of the sector, and suggested instead that special fisheries financial institutions such as rural banks be introduced that could cater better to the needs of fisher communities. They recommended that lending by existing institutions be based on productive purposes on flexible terms that represent local conditions such as seasonality. Most borrowers in the fisheries sector

were first-time borrowers and lacked experience dealing with formal policies. Campos (2009) argued that fishers could often not repay their loans to formal institutions and informal credit organizations due to external shocks, echoing results from Tietze (2004) like natural disasters.

Borrowers who did not repay their first loan were refused a second loan, and Campos argues that if borrowers received what was termed a 'bridge fund' or a second loan to assist the fisher in recovering from the shock, they were better off than being cut off from financial sources. Tietze et al. (2007) as well, stated that if a lack of repayment was the result of genuine default due to an accident or shock, an additional loan could be issued to the fisher to aid recovery with the principal amount paid back following the 'bridge fund.' Chowdhury et al. (2005) argued that fishers often required time and experience in the formal financial sector before they began to reap the benefits of such services. The length of time borrowers utilized credit was highly influential on household economic growth, noting high levels of growth from loans in the first six years of utilization.

2.4.3 Public Banks and Non-governmental Organizations (NGOs)

The last ten years have witnessed an emergence of literature pertaining to government involvement in sector-based credit and microfinance. Kumar (2005) argued in his study on the access to financial services in Brazil that public banks maintained several key challenges in providing effective, timely, sustainable and locally appropriate financial services. Upon policy changes regarding mandatory credit expansion for commercial banks in 2003, several programs highly improved their outreach and funds dedicated to specific sectors believed to be excluded from the financial sector; however they did so with uncertain costs. Serpa (2008) affirmed these conclusions through a study on credit policy in Brazil since 2003. Both authors confirmed that public banks purely operated and mandated by the federal government lacked the ability to reach the lowest income of the given society and that they lacked sustainability and technical support due to subsidized interest rates and unaccountable loan officers.

Rhynne (2006) representing ACCION International argued that credit flourished in regions where the government did not follow directed credit policies and allowed interest rates to be market determined. Rhynne stated that microfinance regulatory frameworks were effective in expanding credit in many countries including Bolivia and Peru, but that the federal government should not have been directly involved in extending credit. NGOs

were the largest and deepest providers of small loans worldwide (measured by loan size to the lowest income individuals), and, excluding Bangladesh from the equation illustrates that NGOs only provided 26 percent of loans (Rhyne, 2006). Public banks were increasingly expanding microfinance worldwide due to their ability to mobilize funds and resources and extend them through advanced branch networks, but Rhyne (2006) argued that NGOs will remain the social innovators for microfinance.

Arbache (2003), through an article on poverty and markets in Brazil argued that NGOs remained vital in development and credit provision due to their promotion of changes that were within reach of individuals and families involved, through the modest transformations of investments that increased the value of the products by exploring the full range of economic options within a community. Arbache (2003) stated that organizations that operated at the local level retained the potential to assist in local projects such as cooperatives and associations that could raise the value of their natural resources. From the same article, Parente (2003) argued that public banks operated by federal policies did not often address local development goals and failed to capture the lowest income individuals and households.

Parente (2003) stated that the Bank of the Northeast in Brazil operated the Employment and Income Generation Program (PROGER), a purely state-run credit delivery program, as well as Crediamigo, the largest microcredit provider in Brazil. Crediamigo was managed separately by the bank using microfinance technology and was supported by ACCION International, believed to be responsible for its high penetration in low income regions and almost perfect loan recovery rates. PROGER was conceived and operated without the support from any non-governmental entity and failed to capture the poorest households while maintaining default rates of around 28 percent. Kumar (2005) compared the success of PRONAF with Crediamigo arguing for more consistent policies and approaches to credit delivery in Brazil, stating that public banks were most effective when partnered with NGOs specialized in credit provision to low-income borrowers.

2.5 CONCLUSION

Empirical evidence has proven that small-scale fishers in Brazil and around the world have been faced with challenges of competition at sea with industrial fleets and at the shore with their small economies of scale and marketing power. The results have shown an increase in the vulnerability of small-scale fisher households and a need to implement livelihood strategies that increase the household's income versatility. Various

authors have contributed to the discussion on the issues facing small-scale fisheries in regards to their challenges of marketing their product, diversifying their livelihoods and utilizing loans as part of their livelihood strategies.

Most authors have agreed that a lack of marketing power has affected fishers in a way that has reduced their potential income and that issues of competition with the industrial sector has led to declines in fish stocks in many regions around the world. However, there have been major disagreements throughout the literature regarding the socio-economic state of fishers and their decision to take part in fisheries. Past literature stated that small-scale fisheries was the livelihood of last resort due to the open access of fisheries and the lack of options elsewhere. More current literature revealed that fishers often highly identified with the sector and have remained there by choice, due to generations of fishing within the family or due to the appealing characteristics of the sector.

A common conclusion pertaining to credit access for fishers has suggested that formal credit sources have still lacked appropriate functional arrangements for credit provision that may effectively provide services relevant to the fishing sector. Formal credit provision for small-scale fishers has most often remained bureaucratic and contained policies that do not match the informal characteristics of the fishing sector. Informal credit sources although closer to the fishers and logistically more straightforward, have not captured the need for higher valued investments and have maintained a poor reputation for charging high interest.

High rates of loan defaults by small-scale fishers have led several credit institutions to doubt the creditworthiness of fishers. Insights on this concern have included a need for more technical assistance with loans and a greater focus on savings. Increased organization of small-scale fishers and the development of credit and marketing cooperatives have been recommended by several authors as a potential next step in increasing access to credit as well as strengthening the marketing power in this sector. African fisheries examples stated that leadership within fisher associations as well as the government fisheries ministers will be required to play a role in the support and mobilization of such incentives if their potential is to be realized.

Kumar (2005), Parente (2003) and Rhyne (2006) led the way in the argument for greater non-governmental involvement in the conception and support in public credit programs aimed at low-income potential clients. They argued that despite federal policies

to expand credit access and public bank involvement in credit extension, non-partnered public banks have remained inefficient, unsustainable and have endured high default rates, due to subsidized interest rates, a lack of technical support and follow-up, and the unaccountability of public bank officers who tend to incorporate operational procedures much like conventional banks, with little social obligation.

Chapter 3: Research Methods

3.1 INTRODUCTION

Under the invitation of Dr. Begossi, executive director of the Fisheries and Food Institute (FIFO) at the University of Campinas, the researcher travelled to Paraty, Brazil for the months of September, October, November and December of 2010 in order to conduct a case study research project on coastal fishers' livelihood strategies and credit access. The research project took the form of a mixed method research structure with the collection of qualitative and quantitative data. An interview schedule was conducted with fishers which through a snowball sampling method informed the researcher of additional opportunities for data acquisition among formal and informal credit providers, fisher associations and government representatives.

3.2 THE STUDY AREA

The Municipality of Paraty is located at the southern extent of the Rio de Janeiro State and consists of the southeast portion of the Ilha Grande Bay. The region is well known for its Coastal Atlantic Rainforest, which has been preserved under the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) and other state and regional actors. The region's largest community is Paraty, located at the heart of the municipality and surrounded by dozens of smaller villages, many of which are comprised of small-scale fishers identified as Caiçara.

Caiçara culture is closely linked to the history of occupation along the Coastal Atlantic Rainforest and emerges from Portuguese European and Indian culture, which mixed in this region (Sanches, 2001). Today the concept of Caiçara is associated with a social group comprised of people who live near the coastal rainforest, who partake in subsistence strategies tied to ecological and political-economic factors (Begossi and Richerson, 1992). Common activities include hunting, shifting agriculture and artisanal fishing, however, protected areas within the Coastal Atlantic Rainforest have affected the extent to which Caiçara communities may practice these activities (Sanches, 2001). Today, the Caiçara take part in both subsistence and marketing resource production with most conducting both. Many have begun to take advantage of the large tourism potential in the region and are part to full-time cash earners.

Tourism has increased exponentially in the region within the last several decades, due in part to the relatively new Rio Santos highway, which connects Paraty to Rio de

Janeiro and Sao Paulo, the two largest population centers in the country. Despite the sharp rise in tourism in the region, many coastal villages still rely heavily on artisanal forms of fishing as their economic mainstay. However, since growing support for the industrial fishing sector commenced in the 1960s, the nature and success of small-scale fishing has begun to change. Most of the region is well connected via a cost efficient network of bus lines called Colitur, or via boat from communities such as Paraty, Praia Grande, or Larenjeiras.



Figure 3.1. Map of Paraty Municipality, Brazil, including participating communities. (Source: Global Administrative Areas)

Sticking with the IDRC project mandate, the study area was entirely concentrated in the Municipality of Paraty. The communities of Paraty, Praia Grande and Tarituba were selected as the three sites for fisher interviews, due to their relatively similar scale of fishing and fish market operations, and their broad coverage of the municipality. The community of Paraty was the economic center for capture fisheries production and processing in the municipality, however, fishing ranked lower than other sectors such as tourism, economically. The majority of fishing operations commenced at the Ilha das Cobras at the south end of town, where a dock and parking area existed for fishing boats and fish transported vehicles (**Plate 1**). Many fishers that docked and sold fish at Ilha das Cobras were from other nearby communities, however the majority had residence in

Paraty. Fish markets called ‘peixarias’ in Portuguese were the main source of purchase of fish from fishers at this docking area and most maintained fixed buying arrangement with certain fishers.



Plate 1. Ilha das Cobras, Paraty

Paraty contained the majority of the large diesel fishing boats in the municipality. Fishers here used a full range of fishing techniques such as non-motorized canoes, through mid-sized diesels (between six and nine meters), all the way to large boats crewed by up to four fishers (over nine meters) (**Plate 2**). Located in Paraty is the official fishers’ association called the ‘Colonia de Pescadores,’ which handled most of the required paperwork for fish licensing and loans. In addition to the fisher’s association in Paraty which operated outside the government, was the Secretary of Fisheries and Agriculture (SFA), the municipal branch of the government for the local management of fisheries and agriculture. Paraty was also the only community in the region to hold bank branches, and most Brazilian branches could be found there, including the Bank of Brazil, which was involved in government run loaning schemes for fisheries and agriculture investments.



Plate 2. Highest and lowest size range of boats found in the municipality

Praia Grande, located approximately 15 km north of Paraty was largely comprised of small-scale fishers (**Plate 3**). The community contained approximately 100 full-time fishers, and 400 residence. There was one fish market in town located near the dock called Peixaria Sinezio and fishers from Praia Grande and other communities from Ilha Araujo sold fish to this market. Industrial fishing boats were rare in this community and the fishing fleet ranged from non-motorized canoes to midsized diesels, that averaged seven meters in length. Thirty kilometres further north was the community of Tarituba, with approximately 90 full-time fishers and a similar number of residence as Praia Grande (**Plate 4**). Tarituba also contained one fish market, called Peixaria Lara which purchased from fishers at the local dock. Fishing boats at Tarituba ranged from non-motorized canoes to large diesel fishing boats over nine meters long with a majority being mid-sized diesel boats under nine meters. Tarituba received a lot of traffic by fishing boats from other communities and many fishers there did not sell to Peixaria Lara. For both Praia Grande and Tarituba, fishing remained at the center of the local economy. Tourism existed in both communities, but was dwarfed by that of Paraty. Fishers in this region were not stationary, and travelled extensively between communities making it difficult to track the actual numbers in each community.



Plate 3. Praia Grande



Plate 4. Tarituba (Source: www.paratyvirtual.com)

3.3 RESEARCH DESIGN

Through the use of a case study design, the researcher collected detailed information using various collection procedures, like qualitative and quantitative survey methods. The need for triangulation led the researcher to use a mixed methods approach to data acquisition. The mixed method approach was used due to the inability of one type of survey instrument to remain effective for all types of participants and questions. Pilot tests were used for fisher interviews in order to establish the adequacy of the survey instrument in meeting the needs of the researcher, and the survey was modified substantially upon completing four interviews. Interviews following this test period followed a logical order and did not change. However, the researcher had only one opportunity to conduct interviews with the Bank of Brazil, FIPERJ and the fishers' association. Therefore, survey instruments required a more broad and cautious approach,

using questions that could lead to other question in the process of developing a story that could be triangulated back to pre-existing data obtained from fishers. Moreover, interviews with one stakeholder were used to identify other stakeholders of importance on the issue. For these reasons, a mixed method approach was most suitable for obtaining the required information for the diverse participants.

3.4 DATA COLLECTION

The region of Paraty contains 12 communities which have in the last two years been researched by Dr. Begossi and other collaborators. Of those communities, Tarituba and Praia Grande were of special interest to Dr. Begossi due to the high percentage of full-time fishers in these communities. The community of Paraty was selected as the third community due to its proximity to fish markets and formal institutions and the sheer quantity of fishers stationed there. All three communities contained relatively similar socio-economic characteristics which allowed for the combining of results for all three sites and allowed the researcher to verify that the credit needs and challenges of credit use and availability were not solely characteristic to one site. Interviews were conducted with fishers, fish market owners as well as one interview with the president of the fishers' association, a representative from the Fisheries Institute of Rio de Janeiro (FIPERJ) and the PRONAF agent from the Bank of Brazil (Figure 3.2). All interviews were conducted in Portuguese, and were documented in point form in English. A Brazilian researcher working under Dr. Begossi was hired by the researcher to clarify sections of the interview not understood by the researcher. Names of participants were not included in the final data and no interviews were taped. All data translated from Portuguese to English was undertaken by the researcher, whether directly from the participant, or via notes taken by the research assistant.

Table 3.1. Number of interviews by participant category

Participant	# of Interviews	Location of Interviews
Fisher Households	30	Tarituba, Praia Grande, Paraty
Fish Market Owners	6	Tarituba, Praia Grande, Paraty
PRONAF Agent	1	Paraty
FIPERJ	1	Paraty
Fishers' Association	1	Paraty

3.4.1 Fisher Interviews

Thirty full-time fishers were selected from three different communities; nine in Tarituba, nine in Praia Grande, and twelve in Paraty. The sampling size in each community was determined by the estimated number of fishers in each community. A limitation when estimating the number of fishers was the wide range of estimates in each community due to the many unlicensed fishers and those that stated that they were fishers but rarely fished. Potential survey participants were asked if they considered fishing to be their full-time employment, and were selected for further questioning based on their response. Interviews followed a semi-structured and open-ended format allowing for multiple choice, dichotomous and short answer responses. An interview schedule was prepared with the assistance of the NRI and approved by the Research Ethics Council at the University of Manitoba prior to field work. Interviews did not exceed one hour, with a minimum length of 20 minutes. Following these interviews the interview schedule was revised and previous respondents were consulted with newly added questions. Data collected from all participants in Paraty remained confidential, and all data, personal information, quotes, and facts were utilized following the direct consent of the participants.

3.4.2 Buyers and Formal Banks

The second stage of the research process was to conduct interviews with formal and informal credit providers. These interviews were held upon the completion of fisher interviews to enable the researcher to establish the principal trends, concerns and challenges among fishers and to enquire credit providers regarding these findings. In total, six fish market informants were interviewed and one informant from the PRONAF department of the Bank of Brazil. The rationale for these site selections stemmed from the responses of fishers and their sources, or intended sources of credit and sale of fish. The Municipality of Paraty hosts no informal credit organizations, however, fish markets were the closest entity to any organized form of informal lending. The communities of Tarituba and Praia Grande held one fish market in each location and Paraty held 10, of which the four most commonly mentioned markets were selected along with the two fish markets from the other communities. The six interviews among informants at fish markets did not exceed 40 minutes with a minimum of 18 minutes in length and involved the use of a semi-structured interview schedule, devoted to the understanding of their relationship with fishers, buying strategies, and credit provision among fishers.

The PRONAF department at the Bank of Brazil was selected due to the large quantity of fishers who either used or attempted to utilize the program for credit acquisition. The questionnaire was semi-structured, utilizing closed-ended questions for bank statistics on fisher loans and defaults and open-ended questions regarding the challenges that the PRONAF program was experiencing with fishers along with future directions and recommendations. The interview with the PRONAF agent lasted one hour in length and took place at the Bank of Brazil in Paraty after business hours. Interviews with informal and formal credit providers enabled the triangulation of results generated from fisher interviews in order to understand from an institutional standpoint the potential reasons for previous responses from fishers.

3.4.3 Verification Interviews

In order to verify results upon the completion of fisher and credit provider interviews, two short interviews were held with fishers at each study site. In addition, an interview was conducted with the fishers' association and with a representative from the Fisheries Institute for the State of Rio de Janeiro (FIPERJ). These interviews served the purpose of both verifying the results and offering recommendations to many of the issues raised over the course of the research. Both interviews were held in Paraty, and did not exceed one hour in length.

3.5 DATA ANALYSIS

The use of qualitative and quantitative survey instruments led the researcher to utilize various methods in data analysis, depending on the research subjects. Fisher survey results were analyzed in Microsoft Excel using simple statistics in order to categorize the dichotomous, multiple response questions. The results were displayed in the form of charts in graphs, and percentages. Categories for open-ended short answer questions were only as broad as the responses that fishers gave. For example, fishers were asked what they believed were the greatest impacts on fish declines. The researcher did not enter with a set of pre-determined categories, but allowed for a multiplicity of responses that were later categorized and analyzed quantitatively.

Results generated from interviews with informants at fish markets were analyzed qualitatively, using manual transcription. Results were displayed in a written format that presented trends and commonalities among fish markets. The data produced by interviews with the informants from PRONAF, the fishers' association and the representative from FIPERJ were solitary interviews and did not require transcription or

quantitative categorization. In order to develop a discussion and make possible recommendations based on the analyzed data, secondary data sources regarding Brazilian policy and legislation around poverty and credit access were utilized in chapter six of the discussion.

3.6 RESEARCH LIMITATIONS

The researcher was confronted with several challenges and limitations in terms of data collection in the field. The language barrier was the primary limitation in conducting interviews, especially for the first 15 interviews. Language was more than a logistical barrier as fishers in general warmed up to the researcher and volunteered more information following the researcher's ability to converse in Portuguese. As a Caucasian North American researcher, study participants were often puzzled by the researcher's involvement in data collection with the Brazilian context, not to mention data collected on household finances and local financial arrangements.

Another limitation during the data collection process included the challenge of finding fishers who were willing to be surveyed. Approximately 30 percent of the fishers enquired for surveys refused. Implications of this challenge include a certain bias towards more affluent fishers due to increased openness of wealthier fishers. Many of those who refused were those who fished from canoes as well as those working on board larger scale vessels. The researcher experienced challenges regarding data quality for the interview conducted with the president of the fishers' association due to inconsistencies experienced between data collected by the researcher and other researchers involved in research in Paraty. The interview with FIPERJ also revealed data of questionable quality due to the opinion of one individual representing the fisheries institute for the whole of Rio de Janeiro State.

3.7 CONCEPTUAL FRAMEWORK

The conceptual framework chosen for this research project followed the version of the Sustainable Livelihoods Framework (SLF) from the Department for International Development (DFID). This framework was chosen for this research due to its consideration for the vulnerability of low-income individuals or households, along with the policies and institutions that play a role in chosen livelihood strategies and the outcome of these strategies. The framework fit well into the project on small-scale fishers in Paraty due to the researcher's analysis of all levels of the framework in regards to fishing policy, fish marketing systems, credit policy, and the federal laws and policies

that heavily influence the opportunities for lucrative livelihood strategies that fishers maintained. The framework shows how in different contexts, sustainable livelihoods are achieved through access to a variety of livelihood resources, such as natural, financial, physical, social and human capital, which are combined in the pursuit of a range of livelihood outcomes (Carney, 2002).

For this survey, the vulnerability context refers to economically vulnerable fishers in terms of access to fish, fishing assets and credit, along with livelihood diversity within the household and social capital. The vulnerability context is analyzed and discussed primarily at the start of chapter four. The transforming structures and processes refers to policies surrounding fisheries management and sector-based government subsidized credit. This theme is picked up on throughout Chapters four, five and six, with Chapter six discussing in greater detail institutional and federal policies around fisheries credit. Livelihood strategies are discussed in terms of the declining fisheries sector, but also in terms of the public credit option introduced to Paraty in 2009. Chapter four and five analyze and discuss the livelihood strategies of fishers in relation to these two topics.

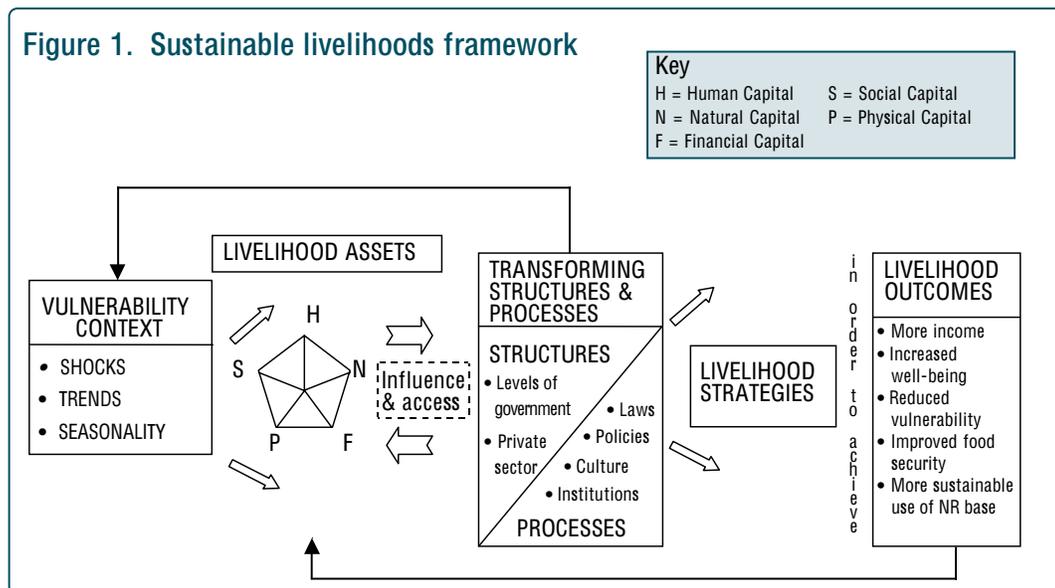


Figure 3.2. Sustainable Livelihoods Framework (DFID). (Carney, 2002)

Chapter 4: Economic Vulnerability and Fisher Livelihood Strategies

“Without appropriate institutional credit arrangements, an important link is missing in the fishery industry and the optimum utilization and allocation of human and marine resources and capital in the fishery industry is hampered.... they also need to be financially viable and sustainable as to encourage the growth of economically and financially viable fishery enterprises and not to contribute to over-capitalization of fisheries and resulting over-exploitation of fisheries resources.”

(Source: FAO Fisheries and Aquaculture Department, 2011)

4.1 INTRODUCTION

Chapter four focuses on the first three objectives of the research project, namely, determining the challenges fishers faced in terms of income generation, the livelihood strategies they employed to overcome these difficulties and a focus on the use of credit within fisher livelihood strategies. The purpose of including these objectives in this chapter was to determine how the challenges within the fisheries sector have influenced fisher livelihood strategies as well as to determine the implications of existing credit options on fisheries sustainability and fisher livelihood strategies. Related field interviews for this chapter included 30 fishers interviews, six interviews held with the owners of fish markets in all communities of concern, the PRONAF department of the Bank of Brazil and finally the fisher’s association in Paraty. Results have been displayed quantitatively for fisher survey results in the form of tables and graphs, and qualitatively for fish market owners in the form of observed trends and specifics for certain communities.

4.2 THE DECLINE OF FISHERIES

When conversing with fishers there was a common impression that fisheries as a whole was not what it used to be, and that it had changed for the worse. A study undertaken with small-scale fishers near Paraty on the coast of Sao Paulo State confirmed that daily catches have declined from 14 kilograms/day to 11.32 kilograms/day over a ten year period from 1992 to 2002, attributed partly to industrial fishing activities in the region (Lopes & Begossi, 2008). Almost all of the challenges that fishers faced could in some way be traced back to the decline in the fishing industry. For example, many fishers

commented that they did not need a loan to construct their house 30 years ago, but would definitely need one now, as the physical number of catches had diminished and the value of their catches had declined relative to the rising cost of living. Assets were more expensive than years passed and their annual wage did not match the changing economy. Fishers were asked about their perceptions of the state of fisheries and whether they believed that fish catches were changing. Fishers were posed an open ended question in which they were allowed to provide up to two reasons for the fisheries decline if they in fact noted a decline. Figure 4.1 illustrated using a bar graph, shows the number of responses for fish catch decline given by fishers during interviews. The decline in fisher wages as a result of diminishing catches contained important implications for loan demand as well as the ability for fishers to access loans. Several fishers that commented on the issue of fisheries decline in terms of too many fishing boats, were themselves taking part in purchasing a boat or upgrading to a larger boat. Despite the obvious fisheries decline, many fishers wished to increase their capacity and capture a larger piece of the economic pie.

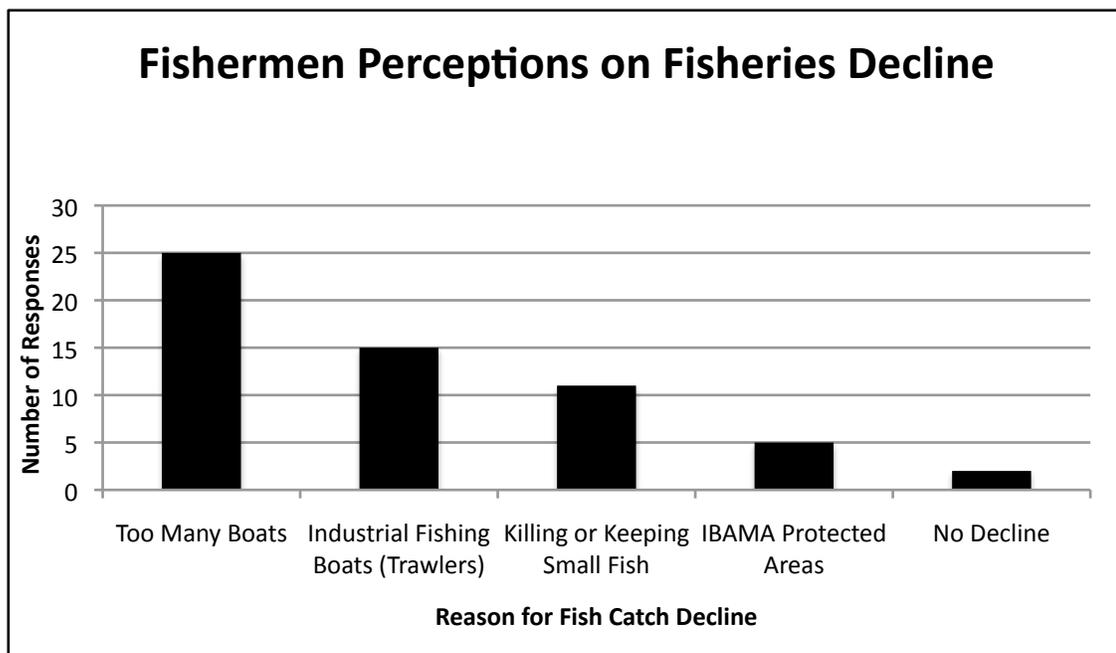


Figure 4.1. Perceived reasons for decline of fish catches ($n = 58$)

The categorization of fishing vessels between small-scale/artisanal and large-scale/industrial varied extensively among fishers, with artisanal vessels ranging in their maximum length from nine meters to 20 meters. Casual conversations among both small and large-scale fishers revealed that small-scale fishers were more likely to categorize industrial fishing vessels as containing a lesser capacity, and larger-scale fishers were

inclined to suggest that artisanal vessels contained a greater capacity. The crews of two fishing boats docked in Paraty, with a length greater than 13.5 meters and an inability to dock in Praia Grande and Tarituba due to their size, stated that their vessels were artisanal. Diegues (2006) of the International Collective in Support of Fishworkers (ICSF) defines artisanal fishers in the Brazilian context as the following:

An independent fish harvester, whose livelihood is based on fishing, on a full-time or part-time basis, using labour and knowledge intensive fishing techniques, and employing family and community labour. The fish catch is usually sold in the market, usually through middlemen, although part of the production is directed to household consumption.

The literature contained no clear consensus of small-scale/artisanal fisher attributes or fishing boats sizes. Crew members on large-scale vessels also stated that they did not notice a decline in fish catches over the course of their careers.

An important distinction should be drawn when comparing the capacity of fishing boats of varying sizes. Owners of mid-sized diesels were most likely to depart and return from fishing in the same day, or return within three days of embarkation. The capacity of these boats to explore greater areas and use higher technology such as sonar was extremely limited, in comparison with larger vessels that were able to identify and quantify their catch before they caught it through advanced technology as well as their ability to remain at sea for up to 15 days. The larger scale vessels were able to adapt quicker to ecological shifts in fish quantities and changes in fish migrations. Fishers often mentioned that small-scale fishing relied more on chance and the fisher's knowledge of lucrative fishing grounds near their communities, many of which were transformed into MPAs and remained off limits to fishing activities. Whether fishers attributed their declining returns to these MPAs or not, most held extremely low opinions of the government body (IBAMA) responsible for decision making on this issue.

Small-scale fishers in terms of conservation have been somewhat uncooperative along the southeast coast of Brazil due to the manner in which the MPAs were developed, namely, without the consultation of community members and user groups (Diegues, 2006). Small-scale fishers have been long fishing in these areas in a relatively sustainable manner, however, state and federal policies implemented without any community involvement in decision making has resulted in a low level of support by local fishers in the attempt of marine conservation (Diegues, 2006). Diegues (2006) emphasizes the

unfortunate transition that occurred in Brazil in 1989 with the termination of the Superintendency for Fisheries Development (SUDEPE) department and the transferring of their responsibilities to IBAMA, which was mainly interested in environmental issues and maintained little interest in supporting artisanal fisheries.

One of the greatest forces affecting the fish catch rates of artisanal fishers in Latin America (Salas et al. 2007) and around the world has been the over-exploitation of the fisheries sector by large-scale industrial fishing fleets (Kleih et al. 2003). Small-scale fishers in Paraty ranked this issue as one of the most severe factors in their declining success, along with the sheer quantity of fishing boats, both large and small. The year 1967 was noted for the surge in support of industrial fisheries by the SUDEPE for the export driven industrial level fishing companies (Diegues, 2006). Prior to 1967, artisanal fishers comprised 80 percent of the fisheries production along the southeast coast of Brazil, and declined to less than 20 percent of the production within only 40 years (Diegues, 2006). Figure 4.2 illustrates the rise and fall of Brazilian fish production since the year 1970 (Earthrends, 2003).

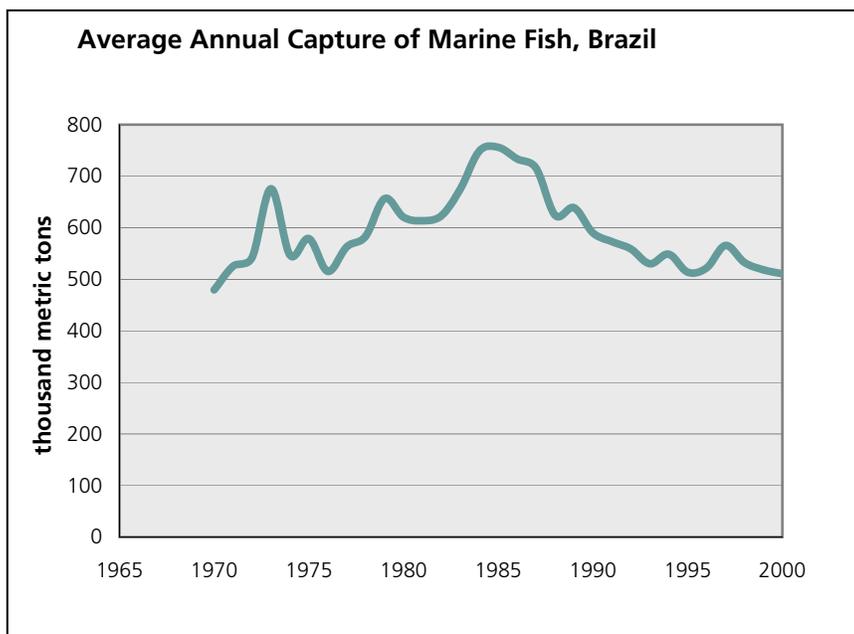


Figure 4.2. The average annual capture of marine fish, Brazil. (Source: Earthtrends, 2003)

Despite the exponential growth in the industrial fishing sector, Brazil has remained the number one net fish importer in South America, partly due to the negative impacts of the strong Real (Corrente, 2010). Corrente (2010) argued that in order to cater to the domestic demand for fish products, for which sales have increased 57.6 percent since the year 2000, domestic production needed to rise significantly in the next decade.

Production of fisheries products in Brazil topped out at approximately 124 million metric tonnes in 2009 and the outlook for production in 2011 was estimated at 143 million metric tonnes, an increase of 15 percent. The World Food Organization (WFO) recommended an annual per person intake of 12 kilograms of fish products, and the Brazilian population was currently estimated at nine kilograms per person annually.

If current trends continue, with future demand and estimates of fish production and consumption growing rapidly, small-scale fishers in Paraty and elsewhere along the Brazilian coast will face even greater challenges in terms of competition for natural resources, especially if incentives to conserve fish populations through MPAs along the coast continue to affect small-scale fishers the most. Fishers reported the year 2010 as the worst fishing year that they have undergone in a significant period. Ensuring a diverse set of livelihood strategies has been vital for small-scale fishers, due to the ever increasing unpredictability of fish catches. The next section analyzes and discusses some of the measures that fishers have taken to diversify their livelihoods and reduce their economic vulnerability.

4.3 THE LIVELIHOOD STRATEGIES OF FISHERS

Livelihood strategies are made up of multiple decisions that an individual or household makes bearing in mind their level of economic vulnerability, disposable capital, and the effects of existing institutions, cultural norms and policies (Brugere et al. 2008). According to the Sustainable Livelihoods Framework (Scoones, 1999) fishers conduct livelihood strategies that are intended at serving a final purpose and outcome. For some fishers in Paraty, the purpose was to decrease economic vulnerability and increase their income and savings, while for others it was to increase their standard of living and decrease the number of weekly work hours. The interviews conducted with fishers in the region of Paraty revealed varying livelihood strategies aimed at different outcomes. This next section will provide in greater detail the extent to which fishers incorporated credit into their livelihood strategies.

Livelihood strategies employed by fishers were often undertaken as an immediate necessity in terms of a household income shortage, or conducted as a privileged strategy due to factors that facilitated economic flexibility. To analyze strategies and classify the fishers, the following six characteristics were used to define economic vulnerability:

1. They maintained sole income source from fishing with no tourism income
2. Fishing assets were valued at less than \$R12,000

3. Fishing remained the only household income
4. The household was unable to obtain, or never took loans
5. The fisher marketed their fish to individuals and restaurants
6. The fisher needed to migrate for work throughout the year

The value of \$R12,000 for fishing assets was chosen as the tipping point between fishing boats capable of longer extensions, shrimp trawling, tourism and transport and ones incapable of these activities, however, boats with value ranging from \$R5000.00 to \$R15,000 were not common (Plate 5) and (Plate 6). The economic vulnerability of fishers is illustrated in Figure 4.3, which was created by evaluating each interviewed fisher based on the above six characteristics of economic vulnerability. The level of vulnerability axis on Figure 4.3 refers to the six characteristics named above. The X axis refers to the number of households that show one, two... six characteristics of economic vulnerability. According to the results of my questionnaire survey with 30 households, six households showed none of these six characteristics; seven showed only one; another seven showed two; and one showed three. I assumed that any household that showed four or more of the six characteristics were economically vulnerable. According to that assumption, ten of the 30 households were economically vulnerable.

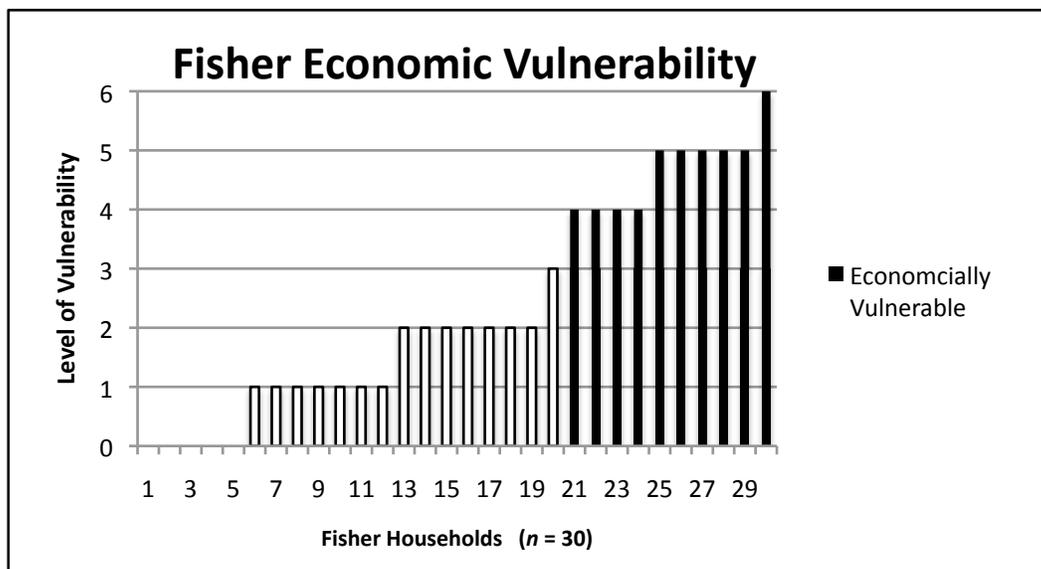


Figure 4.3. Economic vulnerability of fisher households



Plate 5. Artisanal fishing boat with a value between \$R2000.00 and \$R4000.00



Plate 6. Fishing boat valued between \$R30,000 and \$R40,000

Despite the growing challenges of resources declines (Figure 4.1) and economic vulnerability (Figure 4.3), many fishers are choosing to stay in the fishery. Interviews in Paraty revealed that 95 percent (or 28 of 30 fishers interviewed) remained in the industry by choice and did not wish to leave the sector. It is now recognized that in many coastlines around the world that fishers, despite varying levels of vulnerability often choose fishing as their livelihood (Bene, 2003). Interviewed fishers recognized that the industry contained several challenges such as, uncertain income, need for investments, time away from home, and hazardous working conditions, among other challenges, however, they still considered the benefits to outweigh the challenges. Echoing Hill (2005) was that fishers enjoyed being out at sea and identified themselves with it. Many fishers stated that they took pleasure in the self-employment lifestyle with no schedule and no superior.

Fishers were asked questions regarding livelihood diversification and whether they were 1) attempting to capture a higher income from increased fishing capacity of selling higher in the fish value chain (vertical diversification), 2) diversify into other sectors (horizontal diversification) 3) diversify within and outside of the fishing sector and 4) maintain the status quo. Livelihood diversification was analyzed in terms of 'horizontal diversification' out of the fishing sector and 'vertical diversification' within the sector based on Salagrama and Koriya (2008). Fishers' responses totalling at 30 were classified into the four appropriate categories and graphed in order to illustrate the resulting percentages in Figure 4.4.

In regards to livelihood diversification, 13 percent of fishers stated that they desired to maintain the status quo as full-time fishers, not moving at all between sectors or vertically within the sector. Several fishers stated that their income was not substantial, but that it supplied the needs of the household, and that modifying activities decreased the level of certainty that they previously attained. Seventeen percent of fishers were diversifying their livelihoods horizontally and vertically at the same time. All fishers in this category had purchased a larger boat that catered to larger scale fishing and passenger transport (**Plate 7**). To these fishers, tourism still played a minor role in income generation, however with an increased fishing capacity and the option of taking advantage of the growing levels of tourism in the summer, they had reduced their economic vulnerability and increased their options for income generation.

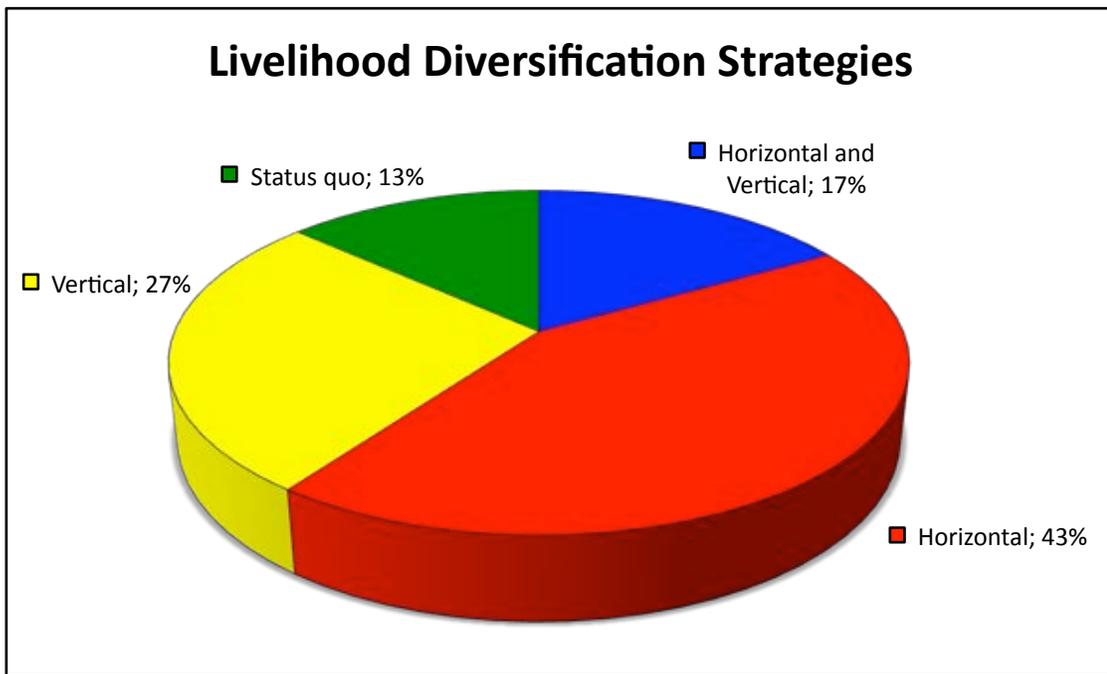


Figure 4.4. Livelihood diversification strategies ($n = 30$)



Plate 7. A fisher from Praia Grande (PG0029) recently used a PRONAF loan to purchase a larger boat that catered to both tourism and larger fishing net capacity

The largest group of fishers at 43 percent, stated that they did not move vertically within the fishing sector, but were attempting to enter new sectors while remaining to some degree in the fishing sector. The majority of fishers that were venturing into another sector had refurbished their current boat to capacitate tourism during the summer (December through February) and the ‘defeso’ (March to May) for an extra source of income. Other fishers stated that they did construction, transporting of goods, and rented

their boat out during the ‘defeso’ or whenever others required assistance (Figure 4.5). Generally speaking, these individuals earned a meagre amount from these alternate activities, when compared to their annual incomes. However, these alternate income opportunities helped fill the gaps during resources scarcity and during the closed shrimp season, and allowed fishers to gain experience in other sectors that increased their livelihood versatility.

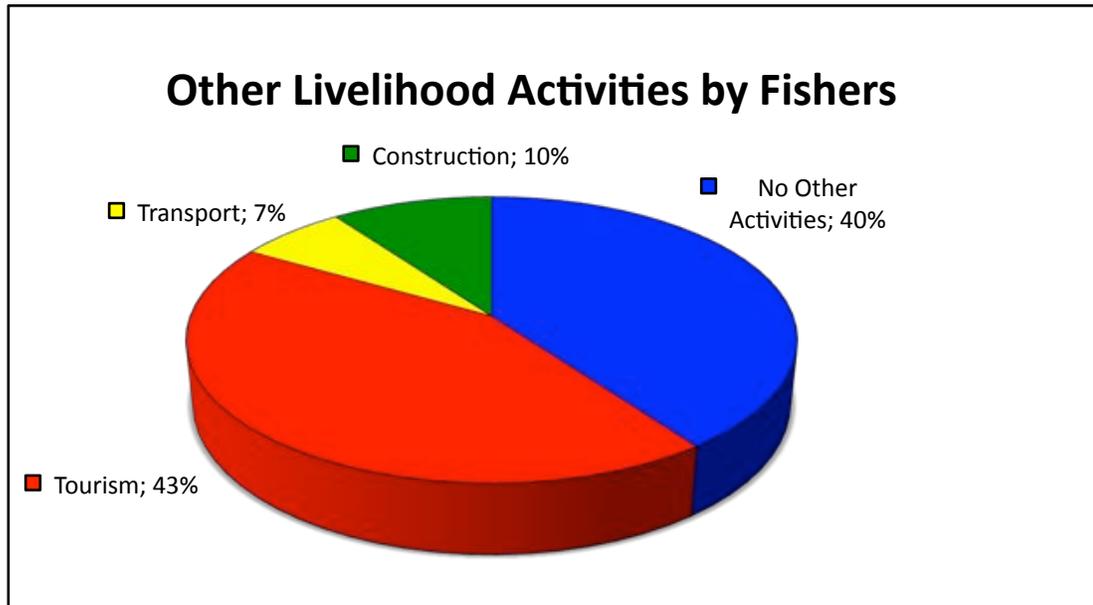


Figure 4.5. Alternate livelihood activities of fishers ($n = 30$)
The diagram illustrates the activities that fishers undertake as they diversify their livelihood horizontally into other sectors.

Licensed fishers received \$R500.00 per month from the government during the closed season and a disputed \$R200.00 from the municipality to put them above the national minimum wage. However, most fishers were required to continue working throughout this period to support their household. The livelihood diversification of fishers has created a challenge for the state government in terms of providing true shrimp fishers their salary during the three month closed season. Several fishers have entirely diversified into other sectors while retaining a valid shrimp trawling licence, and have thus remained eligible to receive the three month salary. The fishers’ association in combination with the state government maintained plans to increasingly formalize the small-scale fishing sector in the year 2011 through rigorous documentation in attempt to pay those fishers who rightly deserved their salary as well as to better control access into the fishing sector.

The final 27 percent of fishers stated that they were not currently moving between sectors but vertically within the fishing sector. Several fishers in this category stated that they had begun selling their fish independent from fish markets, in order to capture a higher value for their catches. Since fish markets generally bought the fish for half to two thirds of their selling price, fishers were able to earn a higher wage if individuals and restaurant owners were willing to pay the fisher as much as they would pay the fish market, or slightly higher, having received a fresh product.

Another form of vertical diversification for several fishers involved the purchasing of a boat with a higher load capacity and with greater comforts on board which facilitated longer fishing trips. Three fishers reported having sold their mid-sized diesel and resorted to smaller-scale fishing due to the stress and high cost of operating a larger boat, and their lack of ability to finance repairs through credit and/or savings. Despite the recognition by some fishers that fishing as a livelihood was increasing in difficulty, their approach was that of simplicity and independence. All respondents in this category considered fishing to be their only household income and had no intentions of altering their livelihood strategy as fish catches were currently meeting their basic needs. However, the lack of desire to alter livelihood strategies is often the product of a previous lack of options due to various factors (IMM et al. 2005). A fisher may decide to remain stagnant if they lack skills in other areas, have no education, and lack financial resources to embark on new employment and income generating strategies. Livelihood diversification is often a privileged strategy (IMM et al. 2005) and in other contexts has been constrained due to a lack of assets and land (Campbell et al. 2005).

The costs of operating a fishing boat has caught the attention of many fishers in Paraty, due to the high price of diesel and general boat maintenance, and some fishers have decided to move vertically down in the fishing sector, in a process of selling off of fishing assets, and commencing smaller scale operations or working on board industrial vessels. There are many risks involved in maintaining or obtaining higher forms of technologies due to loan repayment and issues of maintenance, and many fishers in the global context have chosen to take the path of less stress (Salagrama and Koriya, 2008).

A large portion of fishers in all three communities have transferred the function of their current fishing boat or purchased a new boat that contained the capability for tourism. The Municipality of Paraty contained the unique characteristics of being located between two of the largest cities in Brazil (Sao Paulo and Rio de Janeiro) as well as

containing several tourist destinations, such as attractive beaches, along with the most notable attraction being the up in coming UNESCO world heritage site of Paraty's historical center. The high rates of tourism along the southeast coast of Brazil, especially during the summer months has offered an opportunity for those fishers who are willing and able, to take part in tourism to earn an additional income source (Lopes & Begossi, 2008), as it introduces a sector not commonly available for other small-scale fishers around the world.

In Asian small-scale fisheries contexts described by Salagrama and Koriya (2008) and Campbell et al. (2005), fishers relied on agriculture as the next most available livelihood option. Another fundamental difference between the experience of fishers in Paraty and many other small-scale fishing contexts was the level of economic vulnerability. Although many fishing households in Paraty were economically vulnerable to a certain extent due to an uncertain income and lack of access to assets, other examples from the literature such as Islam et al. (2006) in Bangladesh illustrate a much more profound level of vulnerability.

A high percentage of small-scale fishing boats between five and nine meters contained the potential to be used for tourism, and many of these boats were used for trawling seven barbed shrimp. Most fishers considered tourism to produce higher returns than fishing, and adding this potential to their fishing operation has for many, increased their income versatility. However, for many fishers, the option of tourism activities remained elusive or undesirable. One individual in Praia Grande commented that he partook in tourism solely due to the need for further income sources, but that he disliked tourism, as he found tourists difficult to deal with and preferred the liberty of working alone on his fishing boat.

A common and growing strategy according to fishers in all three communities, was the vertical diversification within the fish marketing value chain. One fisher (PG0030) in Praia Grande stated that "the more I work the less I get paid." Representing the views of many fishers, he was referring to the reality that if a fisher returns with too many fish than he can keep fresh and sell independently, he is forced to accept the low prices of the fish market, instead of fishing less and selling independently for a higher price. Of noteworthy interest, is the potential increase in the sustainability of the fishing industry following this logic of eliminating the middle person, fishing less and earning more. However, all fishing policy in Brazil is rapidly and powerfully moving in the

opposite direction (Diegues, 2006). Figure 4.6 provides a seafood food value chain for Paraty. Fishers maintained the option of selling to the local fish markets or directly to the consumer. Most species of fish and shrimp supplied directly to the customer sold for double the price as that of the local fish market, providing strong incentives for this type of marketing for those fishers not returning with too many fish than they can keep fresh throughout their independent marketing.

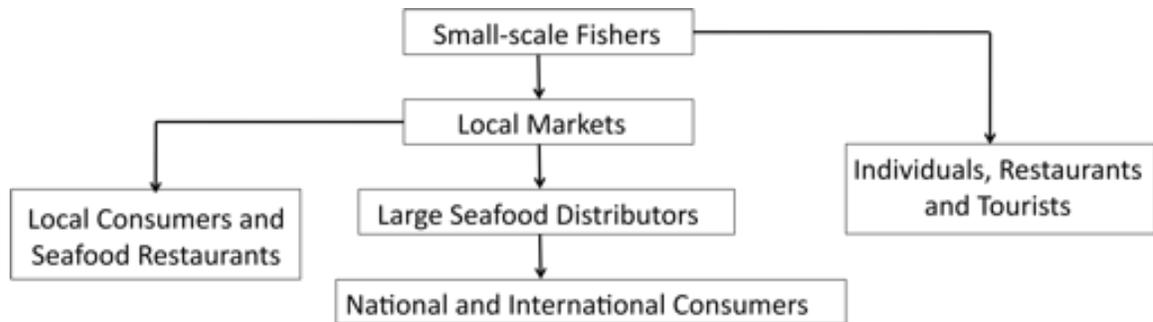


Figure 4.6. Seafood value chain, Paraty



Plate 8. Women cleaning shrimp at Peixaria Sao Pedro

A verification interview with a fisher from Ilha das Cobras in Paraty revealed that fishers, in the past, possessed greater selling power as fish marketing operated on a bartering system with potential buyers. Intermediaries later began to determine fish prices, and obtained a substantial percentage of the consumer value. The incomes of

fishers have declined drastically as well in other contexts such as the Philippines and Vietnam due to their inability to capture a greater market value for their product (Hernando, 2005; Lem et al. 2004). Unless fishers, selling their catch higher in the distribution chain were well equipped with cooling mechanisms, they faced certain challenges of perishability and poor quality products that most restaurants and individuals would be hesitant to purchase. Small-scale fishers faced the most profound difficulties earning a reliable wage and many chose the option of alternative marketing, due to fish prices being set by increasing supply, where their small economy of scale earns the fisher little, an experience also documented by Hernando (2004) in the Visayan Sea, The Philippines. The alternative marketing of fish products have introduced major difficulties in efficiency, through extensive independent travel, in search for often sparse buyers (Tietze, 2004). Wiefels (2005), reporting in the context of artisanal fishers in Latin America, stated that fisher run markets were a viable solution to addressing low incomes among small-scale fishers, however, that they required investment by the lowest income fishers, which public credit providers were not often willing process.

Many fishers have opted out of the stressful circumstances of alternative marketing due to the various risk factors associated with independent fish selling. Local fish markets offered a range of benefits which provided ease and simplicity of marketing. In all three communities of study, fish market owners ran their fish purchasing at least partially through a system of fixed fishers who consistently sold their catch to the same buyer. Fishers under this arrangement were supplied with ice and diesel from the fish market for their next departure with the cost of the supplies subtracted from the final sale upon return. With the exception of Tarituba and Praia Grande which contained fish markets near the landing site, the markets generally arrived at the place of docking and bought the fish through a system of weight calibration straight from the fishing boats **(Plate 9 and Plate 10)**. The larger the catch, the more likely the fisher was to sell to a fish market due to their larger economy of scale and inability to sell the large amount independently. Also, receiving ice and diesel from the fish markets before departure highly reduced the fisher's transaction costs of purchasing these products on their own. An informant from FIPERJ recognized the issue of low fish prices and stated that the gap between buying and selling prices of fish required greater equalization. However, according to the informant, private fish markets were a necessary adversity.



Plate 9. Fisher at Ilha das Cobras transferring fish catches from his boat to the dock for calibration and transport

For several fishers diversifying vertically upwards, the purchase of a larger boat with a greater fish landing capacity was an approach for overcoming low fish prices. By obtaining a boat with tourism capacity, many fishers have actually diversified horizontally and vertically simultaneously. Those that achieved a boat of this capacity were often the least economically vulnerable among small-scale fishers, and were often those whom were awarded high end formal loans. Many fishers of this category were currently paying on their third or fourth formal loan, and owed their successful socio-economic status to faithful repayment of loans. One fisher from Tarituba and another from Paraty, owned two crew sized boats and while they had previously fished for approximately 25 years, now had crews working on these boats, paying 50 percent of their earnings back to the boat owner and dividing the rest amongst themselves, a process also reported by Diegues (2006). These boat owners no longer fished and played an entirely administrative role managing their boats and ranked higher economically than most fishers in terms of annual income.



Plate 10. Fish market worker at Ilha das Cobras, Paraty weighing fish and preparing for transport to the fish market

Since the region surrounding Paraty contained characteristics that drew significant volumes of tourists (**Plate 11 and Plate 12**), some fishers in this region were also faced with unique secondary options outside of fishing. In many other small-scale fishing contexts, low capital investment in fishing, correlated with greater horizontal diversification into other sectors, namely agriculture (Campbell et al. 2005). The higher the capital investment the more likely the fisher was to diversify vertically within the sector, due to a lack of options outside the sector and the reduction of mobility that comes with high investment in one sector (Salagrama & Koriya, 2008). The Municipality of Paraty presented alternate circumstances, due to its lack of agricultural intensification. Although fishers took part in other activities such as construction, as illustrated in Figure 4.3 the vast majority fishers on all levels of investment stated that fishing provided the majority of their income.



Plate 11. Middle Beach, Trindade; 30 kilometres from the community of Paraty



Plate 12. Tourist boats at main dock in Paraty

Tourism was the main factor in horizontal livelihood diversification in Paraty, and was only undertaken by those who possessed a certain level of capital investment. Once fishers surpassed a certain limit in capital investment, they generally focused almost entirely on fish production, due to the lack of versatility of the larger boat as well as the professional fishing equipment on board that inhibited passenger accommodation. Fishers

possessing the smallest diesels and non-motorized or motorized canoes lacked the capital investment to cater to tourism and were more likely to remain in fishing, with little horizontal diversification outside the sector in terms of tourism. However, the smallest scale fishers were the most likely individuals to enter into vertical livelihood diversification, whether by upgrading their boat, joining a crew on a commercial vessel or through selling their products higher in the value chain. Fishers who possessed the lowest amount of capital in fishing gear, such as hook and line, were not likely to enter into marketing and often fished for subsistence purposes while working full-time in another sector. Figure 4.7 illustrates these concepts, and was formulated upon establishing the most common investment in fishing gear and the activities of tourism and independent marketing that corresponded most with these values. The likelihood of diversification was developed by centering the curve on the most common value of assets for both sections and categorizing the fishers which fell into each category. The number of fishers taking part in each activity was divided by the number of fishers not taking part in each activity in order to establish a likelihood percentage.

Linking Livelihood Diversification to Fishing Assets

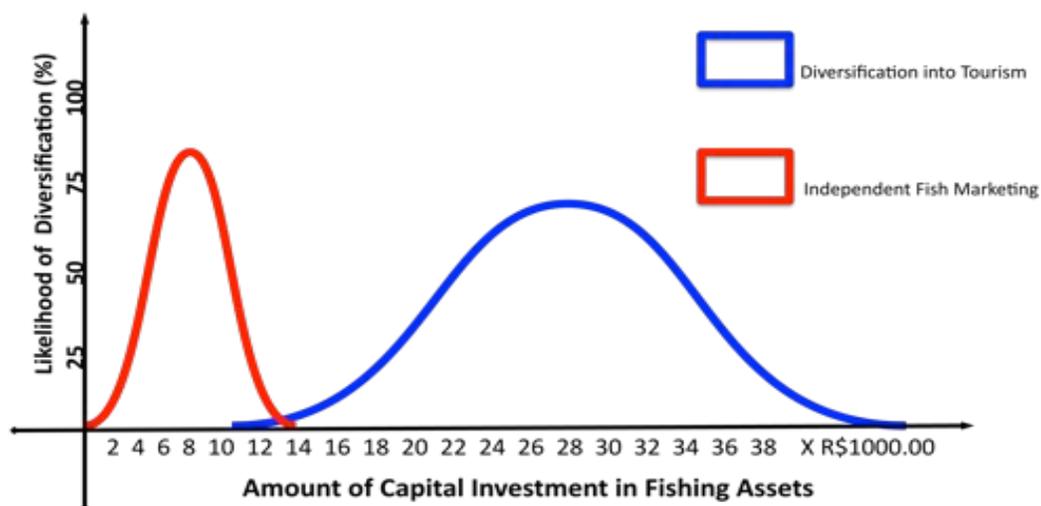


Figure 4.7. Horizontal diversification and vertical market diversification

One of the most fundamental factors influencing one's ability to invest in assets and diversify one's livelihood, is the availability of credit sources that facilitate the financing of these investments. Demonstrated earlier in this chapter was that most fishers have experienced a decline in fisheries catches and fish prices, relative to their purchasing power in the last several decades. The types of decisions that fishers have made in light of

these challenges have been discussed, however, many strategies have been of last resort due to a lack of access to working and physical capital, as well as financial capital, which often facilitates the acquisition of the former.

4.4 THE SUSTAINABILITY AND APPLICABILITY OF SECTOR-BASED CREDIT

An effort by the federal government to provide support for small-scale fisheries has resulted in the introduction of PRONAF loans in to the fishing sector, with the goal of raising the income of poor households through increased production potential. Despite its agricultural focus, PRONAF also delivered loans to fishers and began a new service for loan expansion in Paraty in early 2009, unfortunately maintaining its agricultural application forms and procedures uniform across all sectors. PRONAF loans differed from regular account loans in its targeted population, terms of loan repayment, use of the loan, and interest rates. PRONAF, being a sector-based credit provider offered loans to fishers under the conditions that the client was creditworthy, contained a valid fishing licence and intended on utilizing the loan for a fisheries related investment. With a declining coastal fishing sector and a total of 60 percent of fishers attempting to diversify horizontally to at least some degree into other sectors, the objectives of PRONAF program have lacked alignment with those of struggling small-scale fishers.

Global fisheries subsidies are estimated at 14 to 20 billion dollars annually, and fisher interest rate subsidies on sector-based loans are among one of the main forms of subsidies (Milazzo, 1998). Across the globe fishers are investing further in fisheries technologies just to keep up with losses being suffered by the over-exploitation of the resource, and subsidies have played a role in undermining the sustainability of global fisheries (Milazzo, 1998). Top-down fiscal incentives throughout the 1960s to 1980s in the form of subsidized sector-based loans had a devastating effect on the fishing sector in Brazil and many species have been fully exploited. Public policies designed to produce growth in the sector proved highly affective, however, without appropriate planning. Despite increased concern over environmental management and creation of the Special Secretariat of Aquaculture and Fisheries (SEAP) during the presidential term of President Lula da Silva, this government has once again given the ‘green light’ for fisheries expansion, and introduced several lines of subsidized credit aimed at fisheries investments (Abdallah & Sumaila, 2007). The research agency Evaluation of the Potential of Sustainable Living Resources of the Brazilian Exclusive Economic Zone

(REVIZEE) argues based on recent findings that it can not locate a single species of fish in sufficient volume to withstand the increase in production that the government aims to achieve (Abdallah & Sumaila, 2007).

Findings from Paraty revealed that these communities are not calling for, or prepared for any further expansion in the fishing sector, but quite possibly the opposite. With approximately 33 percent of fishers classified as economically vulnerable and a clear decline in fish catches over the last several decades, sector-based credit providers such as PRONAF contribute to both over-exploitation of marine resources and further dependence on the declining resources. Tietze and Villareal (2003) argue that many coastal communities require credit that facilitates the diversification of livelihoods into other sectors, or less exploited ones. They argue that credit should not be limited to fisheries activities alone, but to alternate livelihood possibilities available to members of the fishing community.

4.5 CONCLUSION

Growing challenges in the fishing sector over the last several decades have forced many fishers in the Municipality of Paraty to take additional steps in order to reduce their economic vulnerability. Fishers have diversified their livelihoods in several aspects, such as vertically within the fishing sector, horizontally into new sectors or a combination of both in order to increase their income through alternative income generating opportunities. These prospects assisted fishers in times of resource scarcity and closed fishing seasons, and facilitated their ability to take advantage of high tourism seasons.

Results generated from fisher surveys in all three communities of focus, along with previous publications from this region concluded that fish catches have declined along this coast for small-scale fishers, which puts into question the purpose of a sector-based credit provider, especially one which provides subsidized loans for the purpose of raising fishing related investments and fish production. Thirty-three percent of fishers were classified as economically vulnerable, however, current fisheries incentives were centered on professionalizing these fishers rather than encouraging their livelihood diversification, at least in part, into other sectors. Results illustrating that 60 percent of fishers have attempted to diversify into other sectors has demonstrated that there exists a need for a credit that is not solely directed at fisheries investments.

Chapter 5: The Credit Needs of Fishers and Institutional Efforts

5.1 INTRODUCTION

Results presented in this chapter reveal the role that loans have played in the livelihood strategies of fishers. Following an analysis on credit needs and options, the challenges faced by both the borrower and the lender will be discussed, utilizing results obtained from fisher interviews, fish market owners, and the Bank of Brazil, with advice from the fisher's association and the FIPERJ. The state of fisheries as well as the local economy has changed drastically throughout the lifetime of most fishers and has in part created a higher demand for financial services, and diversified livelihood strategies. However, fishers have in the last several years faced major issues in regards to acquisition, utilization and repayment of loans, and these challenges will be discussed further in this chapter.

5.2 CREDIT OPTIONS IN PARATY

Results illustrating the available credit options in Paraty stemmed from questionnaires with the fisher's association, responses from fish market owners as well as insights from fishers who described various loaning customs in their community. As stated previously, the community of Paraty was the largest community in the region and the only one to contain bank branches in the entire municipality. However, for the communities of concern, these branches were easily accessed via a cost efficient regional bus system or they were within walking distance for those fishers stationed in the community of Paraty. Branches in Paraty included the government banks such as the Bank of Brazil and the Caixa Economica and private banks such as Bradesco and Itau. Private banks in this municipality did not participate in development projects and required borrowers to create bank accounts prior to utilizing financial services. However, creating a bank account did not imply credit worthiness and many individuals with accounts could either not access the desired loan amount or any loan at all.

In addition to government subsidized loans, fishers with bank accounts often took small loans from the bank in the form of a 'special cheques,' a function of the bank account which allowed the borrower to withdraw from their savings beyond their current savings amount. Banks generally regulated the withdraw limit between \$200.00R and \$500.00R beyond the current savings amount and charged interest on the amount until it

was paid back through future deposits into the savings account. The municipality of Paraty did not contain MFIs or NGOs devoted to credit provision. The majority of these of organizations in Brazil were located in the north of the country, where average incomes were significantly lower than the south and southeast.

Despite the proximity of formal bank institutions to fisher households, informal loans have dominated the fishing sector and the rural sector in general. Family and friends ranked high among informal loans and were generally conducted in small amounts that were interest free. Outside of informal loans originating from family and friends, other loans, small or large attained in this region were entirely dependent on the fisher's connections with fish market owners, other business owners and individuals of higher incomes.

As opposed to other centers along the Rio de Janeiro State coast such as Angra dos Reis, the municipality of Paraty did not contain village moneylenders. Kumar (2005) stated that village moneylenders did exist throughout other regions of Brazil and believed that they often entrapped poor borrowers in debt due to high interest rates. However, in the case of Angra dos Reis, moneylenders were organized into cooperatives and did not regulate loans individually. They were part of an incentive to provide credit and savings options to fishers at low monetary and transaction costs. Fishing villages throughout Paraty had yet to explore organized informal credit options such as ROSCAs due to a lack of fisheries organization in general.

One of the most successful forms of loaning in Paraty for the purpose of large investments has been owner financed purchases of nets, motors and boats, for which the fisher made regular instalments to the owner depending on the fish production of the borrower. Another form of informal lending existed in the region between fishers and owners of assets such as nets and boats. Nets or boats were often lent to fishers in return for a portion of the catch. Several fish market owners in Paraty such as that of Peixaria Sao Pedro stated that they lent out alternative nets to fishers during the closed shrimp season. The informant stated that alternative nets for fishing other species allowed fishers to continue fishing for other species and in turn sell them to the fish market in order that both the market owner and fisher continued selling productively throughout the closed season.

The majority of the credit options available in Paraty originated from the informal sector through family, friends, fish market owners, and other well known high income

individuals within the community. Despite the seemingly plentiful informal credit options, there existed no full-time reliable informal lenders in the communities, and informal lenders were limited in the type of credit they provided, thus mostly meeting short to medium term goals rather than long-term. Much of the informal lending occurred due to high levels of social capital among some fishers and other wealthier individuals in the community. Formal sector loans for fishers were sparse and complicated resulting in their underutilization.

5.3 THE CREDIT NEEDS OF FISHERS

The need for credit and its utilization by fishers in Paraty was diverse and depended on several factors within the fisher's household and community. Household income, social capital within and outside the community and the number of assets dictated the type of credit source that fishers obtained or chose to use. Presented in this section are details from fisher interviews which illustrate the extent to which fishers used the credit options available. Quantitative results from fisher interviews have been displayed in the form of graphs and charts demonstrating the types of credit and savings used for varying investments. Statistical results generated in the region by Hanazaki (2010) have also been incorporated into this section which shed light on the levels of debt of fisher households and all loans in the last two years.

The results presented by Hanazaki (2010) provided an indication of the credit utilization by fishers in the last two years. Eight communities were surveyed in the municipality of Paraty with a total of 352 households (Table 5.1). One of the limitations of the survey in terms of its utilization in this chapter was that the community of Paraty was not included in the household survey, while it was included in the present research. Furthermore, caution must be exercised in analyzing the survey results as fishers often reported requiring key loans only several times throughout their fishing career or lifetime, while the survey enquired solely into last two years. Nonetheless the survey gave a reasonable indication of the types loans pursued by fishers.

Table 5.1. All loans in the last two years for fishers in Paraty. (Hanazaki, 2010)ONLY FISHER
HOUSEHOLDS

Loans	No	Yes. Family	Yes. Middl emen	Yes. Fish markets	Yes. Banco do Brasil	Yes. Other banks	Yes. Other people (excluding middlemen)	Other	No answer	Total
Barra Grande	17					4				21
Ilha do Araujo	32	1		1	1	4			2	41
Ponta Negra	15	3			1	2	1	1		23
Praia do Sono	17	3	1		1	4			3	29
Praia Grande	13		1		2	4				20
Tarituba	8					2				10
Trindade	26	2				9		2		39
Total geral	128	9	2	1	5	29	1	3	5	183

The survey suggested that approximately 70 percent of fisher households have not taken loans in the last two years. The highest number of loans from the survey originated from banks other than the Bank of Brazil. The survey conducted in Paraty, Praia Grande and Tarituba showed that just over half of fishers had bank accounts, but that only 35 percent of fisher households used their bank account to take out loans and that these households ranked low in economic vulnerability. The survey suggested that the less economically vulnerable households were conducting the most loans due to their creditworthiness with commercial banks. However, there appears to be a culture of self-sufficiency

There was no correlation found between bank account holders and fishers with high valued assets, however there was a correlation between fishers who used their account for higher end investment loans and those who either had high valued assets or a second reliable income in the household, generally being the wife's income. The following Figure illustrates the activities of the fisher's wives. Of the 30 households included in the survey in the three principal communities, 27 were used in this Figure as three fishers were single and did not have a second working member in the household.

A second reliable income in the household was generally sufficient to increase the creditworthiness of a fisher to the point of formal loan approval, and most formal banks in the region required collateral and/or proof of a sufficient reliable income to guarantee loan recovery. Figure 5.1 illustrates results that just over half of fisher households did not have any second income source. Of those who did maintain a second income, only 64 percent received an income for which proof of employment and payment was available.

These factors were crucial in formal loan acquisition from public or private banks that fell outside of sector based government programs.

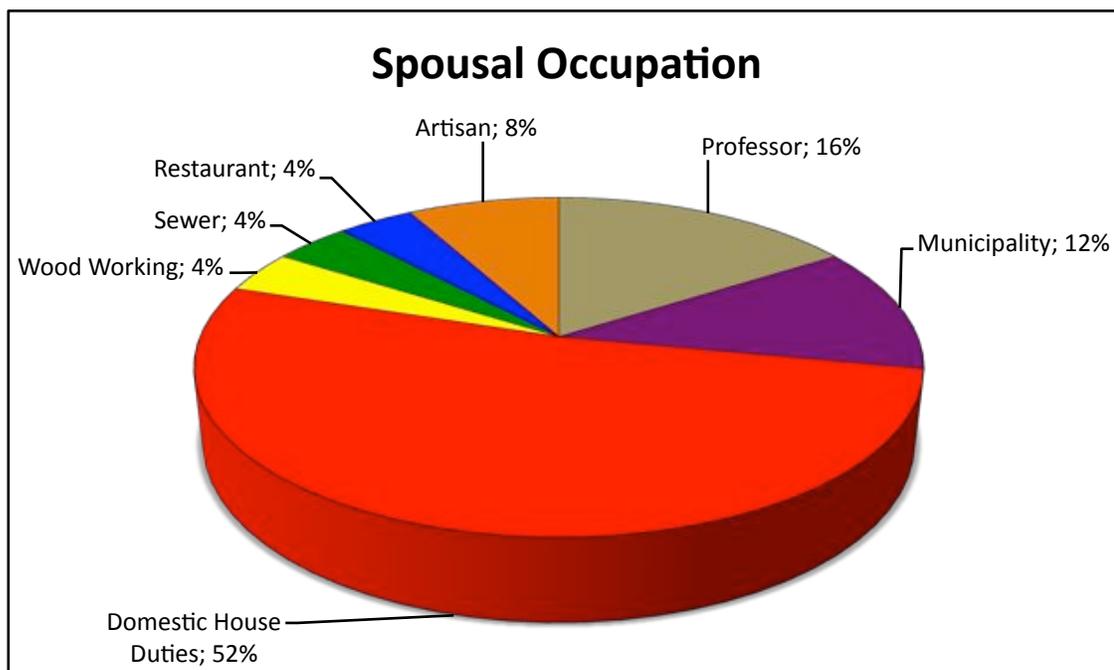


Figure 5.1. Spousal occupation in fisher households ($n = 30$)

Loans from family and friends according to household surveys were generally small and did not generally exceed \$R2000.00. Higher valued loans ranging from \$5,000.00 and \$R30,000.00 originated from both formal and informal sources. Within the informal sector, high end loans were exclusively owner financed boat purchases, which were purchased via a fish market owner or civilian. The owner of the Peixaria Sinesio in Praia Grande demonstrated an example of this type of purchase arrangement. The owner of the fish market used to own fishing boats crewed by other fishers but has since sold his boats to fishers and financed the purchase in an arrangement that best suited the fisher based on their average monthly earnings without interest.

The majority of high end formal loans that exceed \$R10,000 originated from the Bank of Brazil's sector based program PRONAF. PRONAF offered two type of loans, custeios and investments. Custeio loans did not exceed \$R15,000.00 and four percent interest annually, and the fisher was granted a one year grace period for which they were not required to pay instalments or interest on the loan. Investment loans for fishers did not exceed \$R30,000.00 and followed a repayment schedule that the fisher could select, monthly or quarterly. Interest rates for investment loans ranged from one to three percent

interest annually making these loans very appealing for fishers. Four fishers reported that PRONAF did not charge interest on their loans or that they charged ‘almost nothing.’ PRONAF offered loans ranging from \$R500.00 to \$R30,000.00 and offered loans based on the creditworthiness of the potential borrower and/or their co-signer. Many fishers who applied to PRONAF were rejected the first time they applied and were accepted upon requesting a lower valued loan. The informant from PRONAF in Paraty reported a strong demand for loans in the region upon the opening of its program to fishers, due to the high percentage of fishers using poorly running fishing equipment and their lack of ability to save and purchase new assets. The following table from Hanazaki (2010) illustrates the amount of debt that fisher households in the region possessed as of July 2010.

Table 5.2 Fisher debt in Paraty. (Hanazaki, 2010)

ONLY FISHER HOUSEHOLDS								
Debts	No	Less than R\$ 1.000,00	Between R\$ 1.000,01 and R\$ 5.000,00	Between R\$ 5.000,01 and R\$ 15.000,00	More than R\$ 15.000,01	other	No answer	Total
Bara Grande	10	4	1	3			3	21
Ilha do Araujo	19	16	6					41
Ponta Negra	9	12	2					23
Praia do Sono	18	5	6					29
Praia Grande	11	3	3	1				18
Tarituba	7	1	1		1			10
Trindade	20	4	8	3	3	1		39
Total	94	45	27	7	4	1	3	181

From the results presented by this table, a sliding scale demand in the favour of low value loans appears. Of all those who gave responses 40 percent had debt ranging up to \$R5000.00. Only six percent of fishers from this survey maintained debts higher than \$R5000.00. An important factor for consideration is that the current results on loans and debt in the last two years do not necessarily imply the demand for loans that they seem to demonstrate, although the results do show that fishers are not frequent borrowers. The household surveys conducted on the three communities showed results demonstrating that 30 percent of fishers had attempted to take a higher end loan and were rejected. As stated previously, several lowered their request and were accepted and several others reverted to informal means, generally at a lower amount. Results obtained from the Bank

of Brazil reveal that the average loan size from PRONAF was \$R3500.00, which aligns closely with survey results from Hanazaki (2010). The survey results by Hanazaki (2010) illustrated that exactly half of respondents reported having debts, and results in the next section will offer insights on the usage of these loans by fishers.

Noteworthy in the Paraty Municipality was the culture of self-sufficiency among the Caiçara, and preference for informal borrowing and reliance on savings, as opposed to formal loans and debt. For this reason, fishers took few loans throughout their career and only when absolutely necessary. Unique to the region was the absence of interest on informal loans and low interest on formal loans. This has contributed to the lack of multiple debt sources, as often witnessed in other regions in the world such as Bangladesh. Interest-free loans have had effect that ‘loan sharks’ never had a chance, because they could not compete with the low percentage, subsidized interest rates. Although economic vulnerability is present in the region, even these relatively more vulnerable fishers can not be considered ‘poor’, especially when compared with populations from the northeast of the country, or fishers from many other parts of the world, because they are not caught in a cycle of poverty fuelled by debt.

5.3.1 Methods of Asset Purchases

In addition to questions pertaining to loan necessity, fishers in the Paraty, Praia Grande and Tarituba were asked how they used their loans and their method of paying for key fishing related assets. Results in this section have been presented in the form of pie charts and basic statistics. It is important to note that not all loans taken by fishers were on the basis of need, as several fishers reported using loans to build an extension on their house for leisure purposes even after their children had left home.

The survey results showed that all loans related to housing construction and automobile purchases were conducted through formal banks, including the Bank of Brazil, but outside its government funded programs. Those households that conducted expenditures related to the home not through the use of loans, used savings to purchase materials. All but three fishers reported building their house little by little without the use of loans. The three remaining fishers reported inheriting their house from a parent or relative. Many fishers affirmed that the constructing of houses was a gradual process and one for which loans were seldom used. If the need ever arose to purchase a household item, ‘special cheques’ were often used for those that possessed a bank account, and for those that did not, family and friends assisted with small informal loans. For those fishers

with high incomes who chose to construct a second house in another location, formal loans were often used with a combination of savings to finance materials and labour, and were simple to acquire due to their high creditworthiness.

The next most costly asset for most fishers was the fishing boat itself, which ranged from a \$R2000.00 canoe without a motor to a \$R50,000.00 large diesel. Figure 5.2 illustrates the results from 30 fishers regarding their method of payment for their fishing boat and are categorized into four headings. All respondents were either able to point out the boat that they owned or the boat that they worked on as all interviews were conducted on the beach or dock where the boats were stationed. Just over half of the fishers interviewed owned a mid-sized diesel boat with or without a small cabin on board. Mid-sized diesels were classified in this project by those that maintained a market value between \$R20,000.00 and \$R35,000.00 and possessed a length of six to nine meters, while large diesels consisting of all those vessels greater in cost and length. Non-motorized canoes included 13 percent of fishing boats and large diesel boats slightly lower at 10 percent. Those who did not own boats were categorized as non-owners, who worked on board a larger-scaled industrial boat.

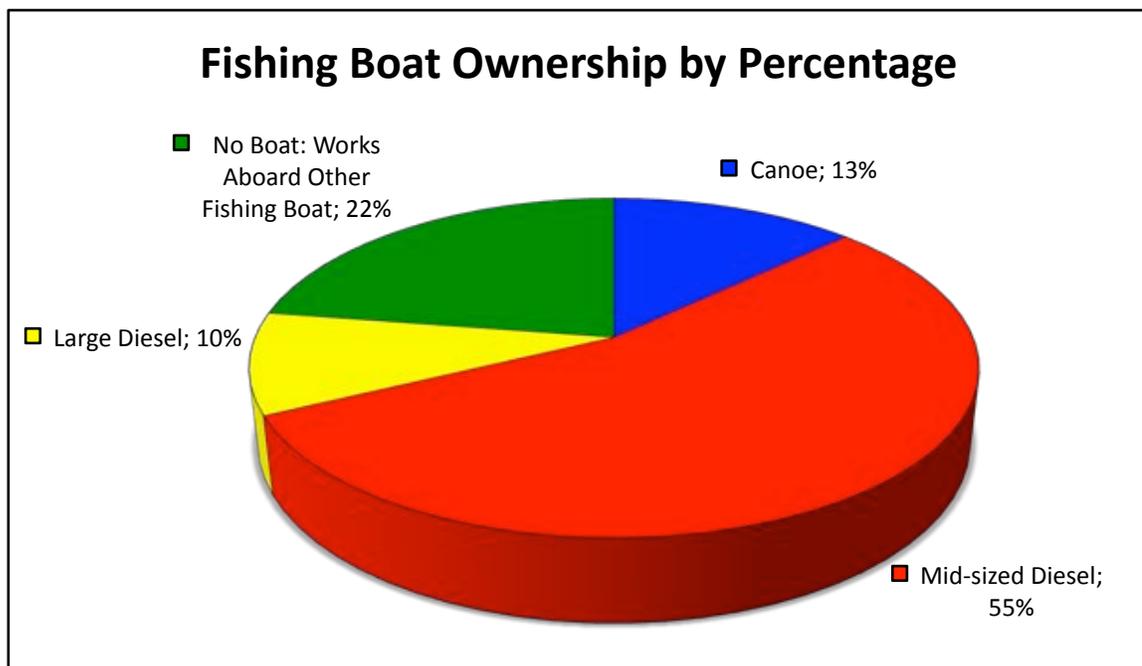


Figure 5.2. Fisher boat ownership ($n = 30$)

Fishers were enquired regarding their fishing boat purchases in regards to their method of payment and the process involved in taking possession. Seventy-five percent of fishers used some form of loan to finance their investment and the majority of those

fishers financed their boat through the previous owner (Figure 5.3). Fishers often considered owner financing outside of the loan and credit spectrum. However, this form of financing was effective for the buyer as the seller did not demand 100 percent of the cash up front. Owner financing was generally undertaken in combination with a down payment, but the remaining debt was repaid in segments based on the fishers income and seasonality of income in an arrangement agreed upon at the time of purchase. Ideally the fisher would pay the deficit by allocating a portion of the value of the catch towards asset payments, essentially repaying in fish.

All fishing boats financed through the formal sector were purchased through loans from PRONAF. Even if the fisher had the option of financing the boat using their own bank account, PRONAF was still a preferred option due to the lower interest rates. Five out of eight boats purchased using these formal loans were part of strategy whereby the fisher obtained tourism capacity with their new fishing boat, but were required not to mention this on their application. Fishers reported interest rates between one and three percent over a maximum of five years depending on the size and duration of the loan. All fishers who used PRONAF stated that the process was difficult but worth it in the end. Over half expressed interest in taking a second loan from PRONAF at a later time. Several informants stated that crew members on large vessels were of the lowest income earners and were either ineligible to take formal loans and/or did not require loans due to their lack of need for fishing assets.

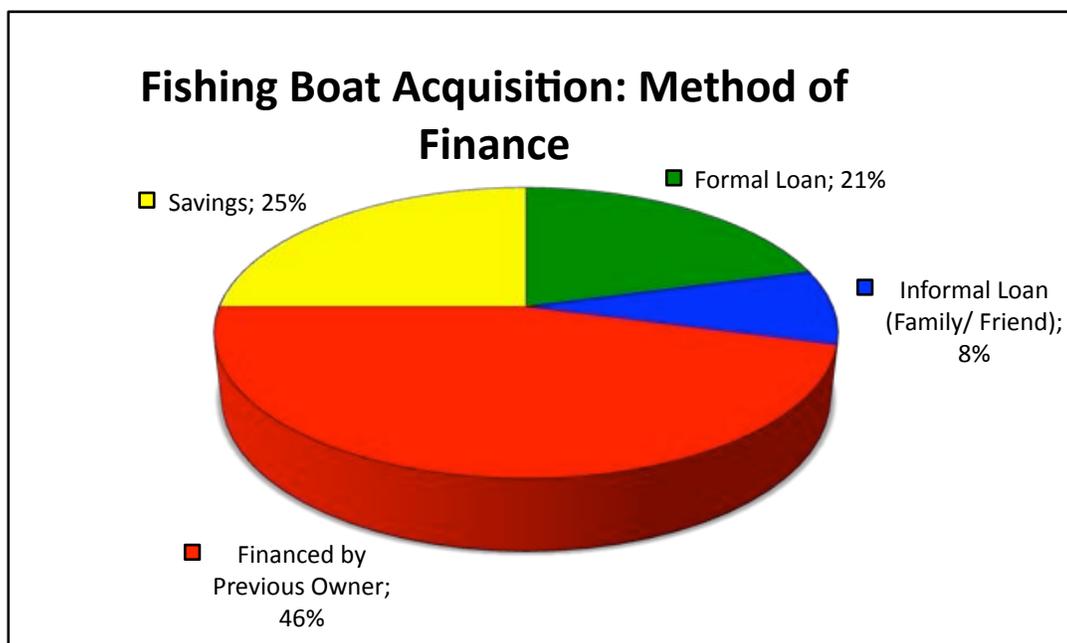


Figure 5.3. Method of financing fishing boat purchases ($n = 30$)

For those fishers who borrowed from friends or family to purchase a fishing boat, purchases usually remained small and were generally used to obtain a non-motorized canoe. Boats purchased through the use of savings were reported by one quarter of fishers who had boats, however this was a 'grey' issue. Results in the three communities showed that all but two fishers who had purchased boats used some level of savings in combination with the loan. The savings category in this case refers only to purchases independent from loans. However, several boat purchases were conducted using 50 percent savings with a loan for the 50 percent remaining, as well as one purchase that worked out to 90 percent savings and 10 percent loan. This fisher had previously attempted to take out a larger loan but was rejected, and then saved until he was eligible to borrow the remainder. Another common method of acquiring a larger boat through the use of savings was to begin with a small boat while saving money working on an industrial boat and then selling their boat every three to four years while using the sale funds with a combination of savings to purchase a higher grade boat.

Important to note was that informal boat financing was rarely classified to fishers as a loan or as credit, meaning that a total 29 percent of borrowers received cash to conduct an investment. Many fishers were required to save for years in order to satisfy the down payment requirements of boat sellers, which often started at 50 percent the actual boat value. Even though 75 percent of fishers obtained their boat through some form of finance, over 70 percent of fishers struggled to meet the purchasing and loans requirements, and often waited years to undertake essential purchases.

The next most costly assets required by fishers were related to fishing gear and boat parts, including motors, nets and general repairs. Similarly to boat purchases, fishers were consulted regarding their method of purchasing and financing of fishing gear and parts. Results for this section showed a higher use of savings than boat purchases due to the lower prices of fishing gear and parts (Figure 5.4). Formal loans were utilized by fishers for gear purchases at a similar rate to boat purchases, using either their private bank account for loans or using a *custeio* loan through PRONAF. Fishing nets started at approximately \$R200.00 in cost and motors, depending on their size and quality sold for as high as \$R5000.00 to \$R10,000.00. Boat repairs most often ranged between \$R1000.00 and \$R5000.00.

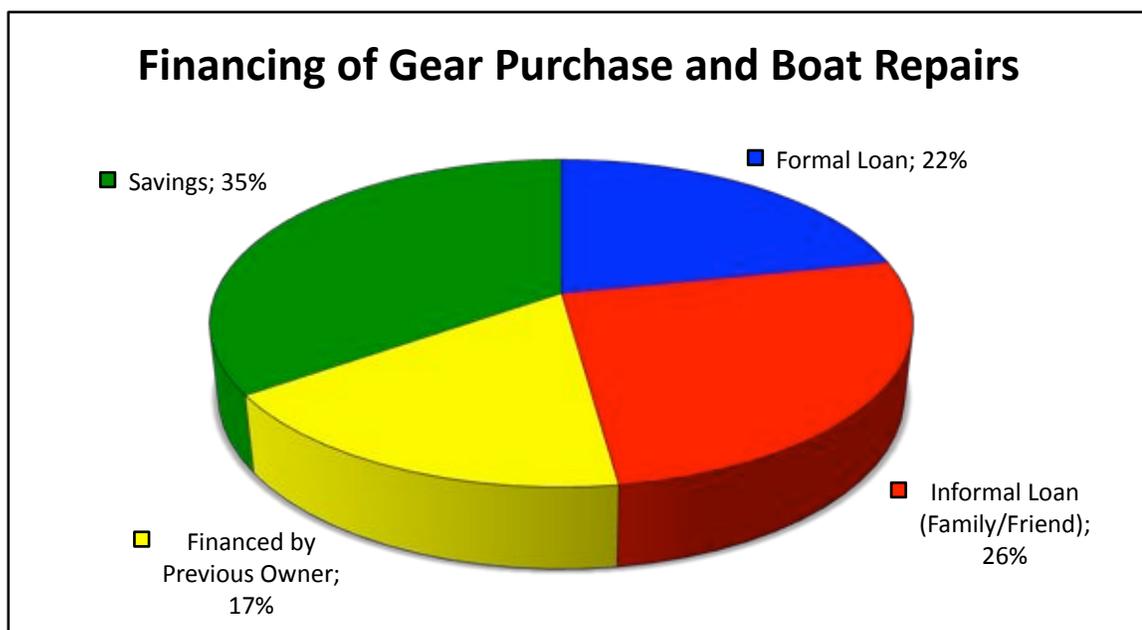


Figure 5.4. Method of financing fishing gear and boat repairs ($n = 30$)

Loans originating from family and friends used to finance boat repairs and gear purchase ranked much higher than fishing boat purchases due to the lower costs of these items and a common willingness of family and friends to lend small amounts when they possessed the funds. Fish market owners played a role in financing 17 percent of gear replacements and boat repairs, but only among fishers to which the owner had a working relationship. Sixty percent of fishers reported maintaining a fixed selling arrangement with a certain fish market owner, with the two often working in partnership with one another and benefiting from keeping each other's business thriving. Thirty-five percent of fishers stated that they never took loans in order to purchase fishing equipment or to repair and maintain their boat.

5.4 DEMAND-SIDE CHALLENGES RELATED TO FORMAL LOANS

The utilization of formal loans amongst small-scale fishers in this region was a relatively new concept. Many fishers were illiterate and the majority had not completed more than four years of primary education, making the formal financial system intimidating and largely inaccessible. Nonetheless, several fishers have increased their well-being and household income due to loans from, for example, PRONAF. The challenges discussed in this section relate to the supply side issues of providing loans and the demand side challenges of acquiring, utilizing and repaying loans. Only loans taken through government programs aimed at fisheries development will be discussed. Loans

from private banks or through the use of private bank accounts will not be included in the discussion, as they maintain no connection or obligation to the fishing sector.

Forty percent of fishers reported having used a formal loan in the past as part of their fishing livelihood strategy, and half of these fishers had used PRONAF to take a loan in the past often travelling long distances to other municipalities due to PRONAF's recent arrival in Paraty in early 2009. All respondents who had used PRONAF throughout their fishing career stated that the loans were difficult to process but that their lives were improved as a result of the loan. Seventy-five percent of these fishers stated that they would take another loan in the future if the need arose. However, bad news regarding these loans has spread faster than the good news, and many fishers have never gained an interest in utilizing a formal loan due to their perception inherited by others who have either applied and were rejected or by those who failed to repay their loan on time, resulting in several months of complications with the Bank of Brazil. Fishers who had never taken out a loan with a formal institution like the Bank of Brazil were asked for up to two reasons for their avoidance (Figure 5.5). The question was open-ended and resulted in four main categories of answers. Nine of the 30, or 30 percent of fishers interviewed were eligible to respond to this question and none of the respondents to this question had ever attempted a loan with PRONAF in the past.

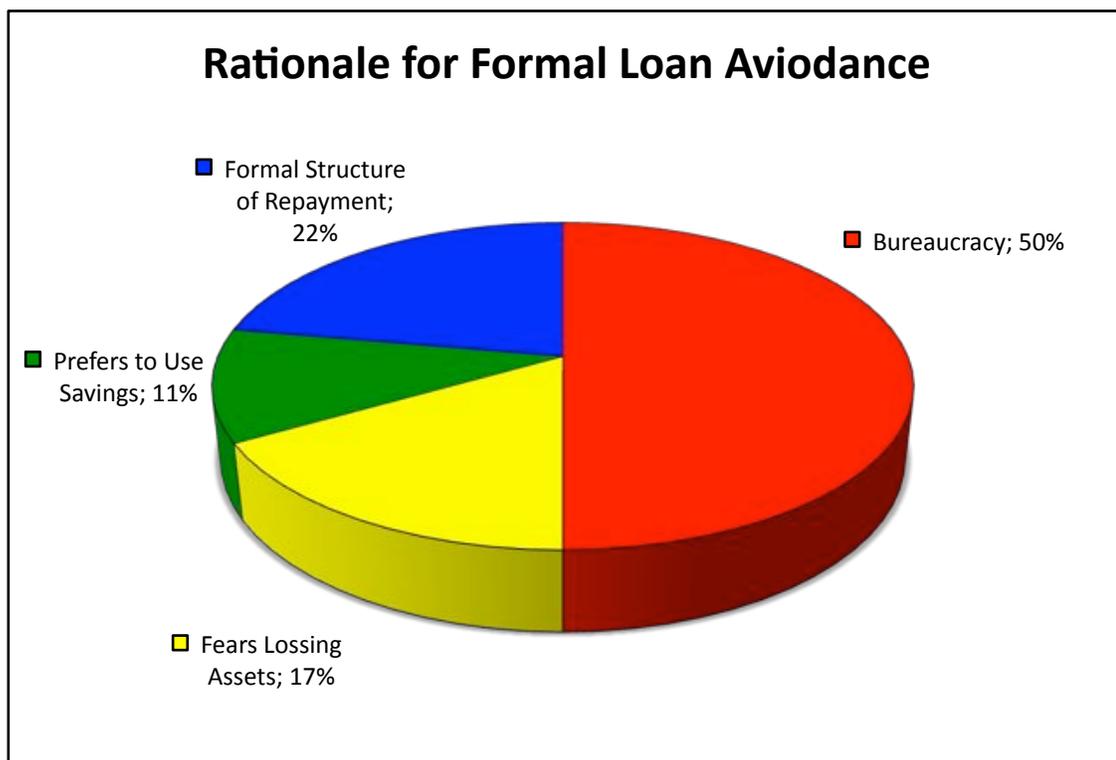


Figure 5.5. Rationale for formal loan avoidance ($n = 18$)

Of all the responses to this enquiry, high levels of bureaucracy was the dominant reason for avoiding formal loans. These fishers perceived the process of obtaining the loan as a net loss in light of the lost time in the present due to high transaction costs. The next most common reason for formal loan avoidance by fishers was the formal structure of repayment, at almost a quarter of responses. Fishers explained that they feared the strict repayment schedule of the loan due to the unpredictability, uncertainty and seasonality of fishing. Fear of losing assets was the next most relevant factor in avoiding loans. Several fishers reported that they would rather deal with the challenges of their current situation, over the risk of losing capital vital to their livelihood. The remaining few respondents stated that they simply preferred not to have debt or to rely on anyone else for their needs. In the case of these respondents, self-sufficiency was the focus of their rationale for loan avoidance.

Many fishers reported the process of their formal loan taking as long as three to six months to be processed. The length of processing time of loans with PRONAF was attributed to the various stages that loan paperwork traveled before the loaned amount was delivered to the fisher (Figure 5.6). The fisher was first required to establish a viable and permissible business plan for the loan and in the case of a *custeio* loan, find a co-signer. The fisher was required to travel to the fisher's association with an onerous list of personal documents and in the process of days or weeks, fill out the required PRONAF paper work that proceeded to the SFA to receive their PRONAF Declaration of Qualification and then on to the Bank of Brazil for analysis of creditworthiness and other personal-history checks. Moreover, applications for loans with PRONAF in Paraty were identical to those used for agricultural loans, making the process even more onerous for fishers, due to clear differences between fisheries and agriculture in terms of periodic payment and livelihood risks. In contrast, Crediamigo, a microcredit provider through the Bank of the Northeast advertizes on the webpage that a Crediamigo CPF is the only documentation required along with photo identification and a proof of residence. The loan agents travelled to the locale of the borrower and the loan was released within seven business days.

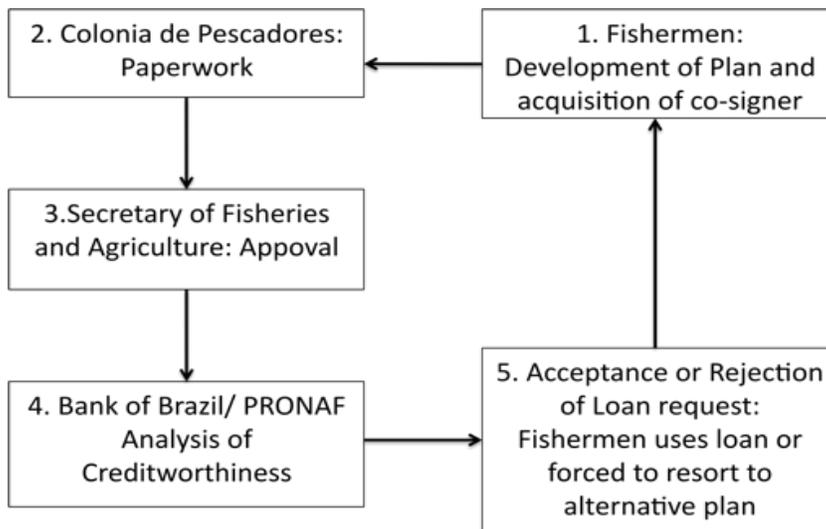


Figure 5.6. Formal loan process for PRONAF

According to the PRONAF agent at the Bank of Brazil, applications for loans by fishers began in large quantities during the first several months of the program in the municipality and declined sharply following the first year of the program. There was an obvious need for credit when the program arrived in Paraty largely due to the dozens of fishers that were fishing with boats that were barely operating, with many that required motor or body repairs. Community leadership at Praia Grande stated as well that many fishers were using gear that was in poor condition, but that many did not earn enough to purchase replacements or conduct repairs.

Fishers were asked if they had ever been rejected by PRONAF upon applying, and those who responded in the affirmative, were enquired as to the reasons given by the loan agency. Thirty percent or nine of fishers responded stating that they had attempted a formal loan in the past with PRONAF and were rejected, resulting in their lack of utilization of this loan service at any time in the later future (Figure 5.7). Other fishers not included in this Figure stated that they were rejected the first time they applied to the program as a result of their high loan request, but were accepted upon lowering their request. Rejected loans in this Figure were the result of logistical factors that made the fisher ineligible to receive the loan.

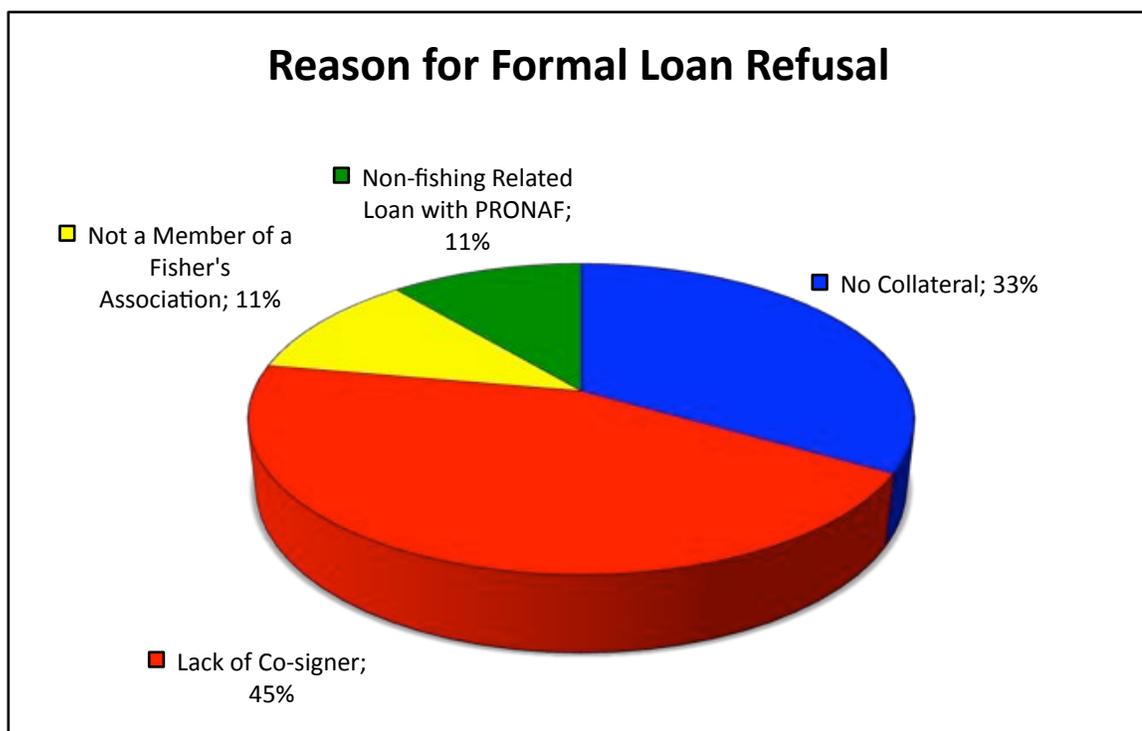


Figure 5.7. Reason for formal loan refusal ($n = 9$)

The most common rationale for loan refusal was the applicant's lack of a co-signer for the loan. Fishers in all three communities stated that the co-signer requirement was the single most difficult factor in obtaining a loan. According to an agent at the Bank of Brazil, the co-signer was the bank's guarantee that despite the questionable creditworthiness of the applicant, the bank would eventually receive the loaned amount in the future. The co-signer was required to be a creditworthy individual, with a reliable monthly income, who could take over the defaulted loan if the case arose. Upon asking a fisher (PT0013) at Ilha das Cobras in Paraty if a co-signer was difficult to obtain, he was quoted responding with an additional question; "Who would want to be my co-signer?" Another fisher at the same location stated that he had watched on the television a program where a woman was a co-signer for a loan that eventually defaulted. The woman ended up in a two year process with the courts in the bank's attempt to have their funds returned.

The co-signer method of guarantee has been used by several sector based credit schemes in Brazil including a small percentage of Crediamigo's loans, with the intention of overcoming the issue of collateral (Kumar, 2005) but has ironically become one of greatest barriers in the way of fishers obtaining loans from PRONAF, with collateral now ranking second among credit barriers. A central difference in loaning procedures between

Crediamigo and PRONAF was that Crediamigo conducted group loans, resembling that of a credit cooperative, using social capital and collateral as their central means in maintaining high loan recovery rates. The lack of fisher organization among fishing communities in Paraty has resulted in an underutilization of potential social capital resources. Fishers often commented on the ease of obtaining PRONAF loans by those that maintained connections with the fisher's association, the SFA or the Bank of Brazil. For example, three fishers in the survey reported using a personal connection from the fisher's association as a co-signer for their PRONAF loan. Panente (2003) in her article 'Poverty and Markets in Brazil' argues that the guarantor is a difficult requirement to fulfill stating that "Nobody wants to be a guarantor." Panente (2003) stated that most people have enough difficulty looking after their own affairs, never mind a risky third party. Moreover, it is difficult to find someone with a sufficient amount of assets to be a qualified guarantor. In addition, Panente (2003) stated that being a guarantor is a favour, which increases the debt of the borrower from solely monetary to social, with a dependency on the guarantor that goes beyond the loan, and until the favour has been similarly repaid.

The next most common reason for loan refusal was the fisher's lack of collateral. A mandate of the government program was that both the fisher's house and fishing boat could not be used as collateral. The bank's rationale behind this mandate was to avoid allowing a defaulted loan to land the fisher either homeless or jobless. The majority of fishers approved of this mandate, commenting that it was a rational method of insuring a level of security on behalf of the borrower, however, it meant that loans were inaccessible to many fishers who required them.

The last two reasons for formal loan refusal received only one respondent each, however, several fishers in other interviews commented that both of these reasons were relatively common causes of loan refusal. All fisheries related loans with PRONAF were to be processed at the fisher's association in Paraty and pass through the SFA before they were received by the Bank of Brazil to be analyzed for creditworthiness. In order for the fisher's association to assist an applicant in the process of a loan, the fisher was required to maintain a valid fishing license and be a member of the association through the monthly membership payment of \$R10.00. An interview with the association revealed that many fishers in the municipality of Paraty do not pay the membership fee and many fishers do not have licenses. The lack of membership at the fisher's association alone

eliminated the eligibility of many fishers in Paraty to formal government funded loans. The president of the association stated that fishers did not see the association as being helpful, thus they refuse to pay the monthly membership fee.

The final reason for loan refusal amongst fishers was due to their attempted utilization of the loan for non-fisheries related purposes. Perhaps this reason was the least common due to the fishers that did not desire to discuss their false declaration on their application regarding their proposed use of the funds. The PRONAF agent from the Bank of Brazil stated that all government subsidized loans geared towards the fishing sector were to be used for fisheries related investments. PRONAF's low interest rates on formal loans made it tempting for fishers to apply for loans through this program despite its use outside of fisheries.

5.5 SUPPLY-SIDE CHALLENGES RELATED TO FORMAL LOANS

The previous section addressed the challenges that fishers faced in relation to formal loan acquisition and utilization. The following segment will reveal issues that the formal loaning institution PRONAF faced when loaning to fishers. The main source of information was an interview with the PRONAF agent from the Bank of Brazil. An interview with the fisher's association along with several fishers provided additional insights on the following challenges.

While consulting fishers regarding the challenges they faced when attempting formal loans, several emphasized that certain individuals were not paying back their loans and that this was creating roadblocks for others with a clean record or first time borrowers. An agent at the fishers association affirmed these findings but could not comment on any of the particular reasons or facts behind the growing difficulties in obtaining loans from PRONAF. For these details an agent from PRONAF at the Bank of Brazil was most helpful.

As stated earlier, the PRONAF department of the Bank of Brazil was a relatively recent arrival in the municipality and had existed there since early 2009. Upon arrival, the PRONAF agent held meetings in many fishing communities along with the fisher's association announcing the newly arrived program and the types of services it was offering. Immediately following the opening, several fishers took out custeio loans to purchase nets and motors, and to conduct boat repairs. Finding a co-signer was easier at the opening of the program due to the lack of negative experiences that would follow in the coming year. A co-signer or guarantor acted as a the principal guarantee for the

custeio, while collateral was used more for investments, making custeios theoretically easier to obtain due to the lack of non-livelihood related assets of many fishers.

The PRONAF agent stated that in the last period, 35 – 50 percent of fishers discontinued paying on their loan due to their inability to make payments. A greater issue than their lack of payment for the bank was that several fishers lacked consultation with the bank regarding their default status in order to renegotiate loan terms. Fundamental to the program was that fishers continued loan payments no matter the size of the payment. High loan default rates have resulted in a temporary closure of the program to first time applications. The agent stated that the program would continue to operate on a normal basis once the defaulted borrowers had repaid their loans. Those fishers who had already achieved a high credit rating with PRONAF were permitted to continue applying for loans, however, if additional borrowers defaulted in the near future, the program management stated the possibility of removing the fisheries sector of the program from the Municipality of Paraty. An informant from the fisher's association revealed that the association was preparing to transfer all defaulted loans from PRONAF to the association through a program called 'The Endorsement Fund,' so that PRONAF could reopen its program to new applicants.

The PRONAF agent stated that some of the greatest issues facing the fisheries sector is that fishers are highly disorganized and lack education on domestic economics and household budgeting. Fishers lacked accountability, and required greater incentives to repay loans. One method that had worked well in the past according to the agent, was to have family relatives act as co-signers for others, creating a higher level of accountability and thus a higher rate of repayment. An informant at the fisher's association stated that there were programs for financial training of fishers and fisher households, either regarding the domestic economy or the use of investment funds, however, the courses were only open to those fishers who had completed their first eight years of primary education, making the majority ineligible.

5.6 CHALLENGES OF FISH MARKET LOANS

Fish buyers in the municipality of Paraty used to be a more common and reliable source of credit in the past, however, they too have experienced low loan recoveries and have taken a much more precautionary approach to lending. Interviews were held at a total of six markets, four in community or Paraty, one in Praia Grande and one in Tarituba, covering a total 40 percent of fish markets in Paraty and 100 percent in the

other two communities. The objectives of the fish market surveys were to gain an understanding of the relationship between them and fishers and if loans were ever granted to fishers.

According to all informants at the fish markets, the system of buying and selling fish had become increasingly formalized over the last two decades. All fish markets except Peixaria Lara in Tarituba operated under a system of fixed fishers who sold to the same fish market after each catch. Despite the fixed system, any fisher could inquire into a sale at a fish market, and many fishers who were not a part of a fixed arrangement sold to various fish markets, depending on the closest one in proximity or the best price for fish one was willing to offer. In the case of all fish markets, ice and diesel was supplied to those fishers who maintained a business relationship with the buyers with the cost subtracted from the value of the catch. The loaning of physical assets to the fishers in this case was rarely due to the fisher's lack of funds, but due to a partnership of convenience that kept each other working without interruptions. Purchasing ice and diesel involved high transaction costs and many fishers stated that this partnership highly paid off.

All informants except Peixaria Sinezio stated that they regularly supplied fixed fishers with interest and documentation free loans. However, the five fish market owners who provided loans stated that they were a lot more cautious in their lending than they used to be. All five owners expressed frustrations regarding the low rate of payback, and Peixaria Lara in Tarituba and Peixaria Sao Pedro in Paraty reported a loss of over \$R50,000.00 in the last 15 years due to defaulters. The informant at Peixaria Lara stated that "Before, your word used to be enough; now you have to distrust everyone." One fish market informant in Paraty stated that fishers used to travel from fish market to fish market attempting loans and then disappearing. Fishers have found it increasingly difficult to obtain loans from fish market owners, however many fishers through a long and faithful working relationship have remained eligible. Interviews with fishers revealed that 60 percent of fishers sold to fish markets on a fixed basis and 65 percent of these fishers believed that they had a trusting relationship with their buyer and could go them for help in the form of a loan at anytime.

The result of documentation and interest free loans in the informal sector in Paraty has resulted in a higher preference for informal loans than formal loans, and for many fishers, the formal sector was a last resort, reflecting other studies (Guirkingner, 2008; Lem et al. 2004) analyzing borrower choices for loans between these sectors. However,

these loans were out of reach for the majority of fishers and most loans did not involve the use of cash credit, but credit in kind or financing. Fish market owners stated that they were lowering the quantities of their loans and gradually making them more exclusive.

When reflecting on past issues of repayment in the informal sector, especially among fish market owners, it may be possible to draw parallels between the issues faced by these loan providers and formal credit institutions in Brazil. The study in Paraty has revealed a common conclusion pertinent to both informal and formal credit providers. In both cases, low to zero percent interest rates on loans coupled with a lack of ability to monitor and enforced repayment were followed by high levels of defaults.

5.7 THE HIGH COST OF LOW INTEREST RATES

Sector based credit programs have long been criticized for their subsidized interest rates, and PRONAF is certainly among one of these programs, with its one percent annual interest rates on investment loans. The purpose of low interest rates in the past has been to discourage the use of informal loans by moneylenders or middlemen who in many situations charged extremely high interest rates and trapped low-income borrowers in debt (Kumar, 2005). A common argument in the literature states that sector-based and credit programs would improve their basic services and spread their loan distribution if they charged near market interest rates, as low interest rates are not required to draw in borrowers (Kumar, 2005; Tietze et al. 2007). Public banks in Paraty were not competing against high interest informal lenders, as there were very few within the region, and all informal loans in the survey were noted as interest free, an experience also reported by Hernando (2005) on fisheries in the Visayan Sea. Fishers in Paraty have been largely free from the issue of high interest rates on loans, however, this may have come at a higher cost.

Kumar (2005) and Nichter et al. (2002) reporting from the Brazilian context, state that low interest rates and soft repayment schedules have caused long-term, low interest loans to appear more as grants than loans, thus reducing the likelihood of repayment. Armendáriz & Morduch (2010) affirm this theory in their report on the economics of microfinance. Simao (2006) states that despite the positive intentions of the Brazilian government in attempting to provide low-income rural households with low interest loans, an additional problem of defaulting has appeared among government subsidized credit programs. PRONAF has been reported maintaining default rates at 28 percent in

other regions of the country, which is at least partly attributed to the disincentive to repay on time due to low interest rates (Simao, 2006).

Kumar (2005) argues that the 'well-to-do' borrowers most often capture interest subsidies in the PRONAF program for which there is no justification for credit subsidies on equity or efficiency grounds. Figure 5.8 illustrates the correlation between PRONAF clients and their level of economic vulnerability, revealing results that fall in line with Kumar's conclusions. The Figure uses data from the economic vulnerability analysis and illustrates each household case in a white bar or no bar at all depending on their level of vulnerability. The depth series axis shows black bars for those household cases, which have been or are currently PROANF clients.

Kumar (2005) states that Crediamigo of the Bank of the Northeast charges monthly interest rates equivalent to PRONAF's annual rates with much higher returns, demonstrating that when a program is well designed it is possible not only to reach the lowest income households but to do so without relying on government subsidies on interest. Moreover, low-income earners are most often willing to pay higher interest rates, as convenient and fast credit delivery is a higher priority than low interest rates when viewed through opportunity costs of lost time on bureaucracy (Parente, 2003). Kumar (2005), Hernando (2005) and Kleih et al. (2003) argue that sector-based credit providers require a greater focus on deposit and savings services as well as additional forms of technical support which could be increased provided that interest rates covered operation costs. PRONAF staff at the Bank of Brazil saw loan distribution and financial technical support as falling under separate institutions, which has highly confused fishers and added substantial inefficiencies within the loan process.

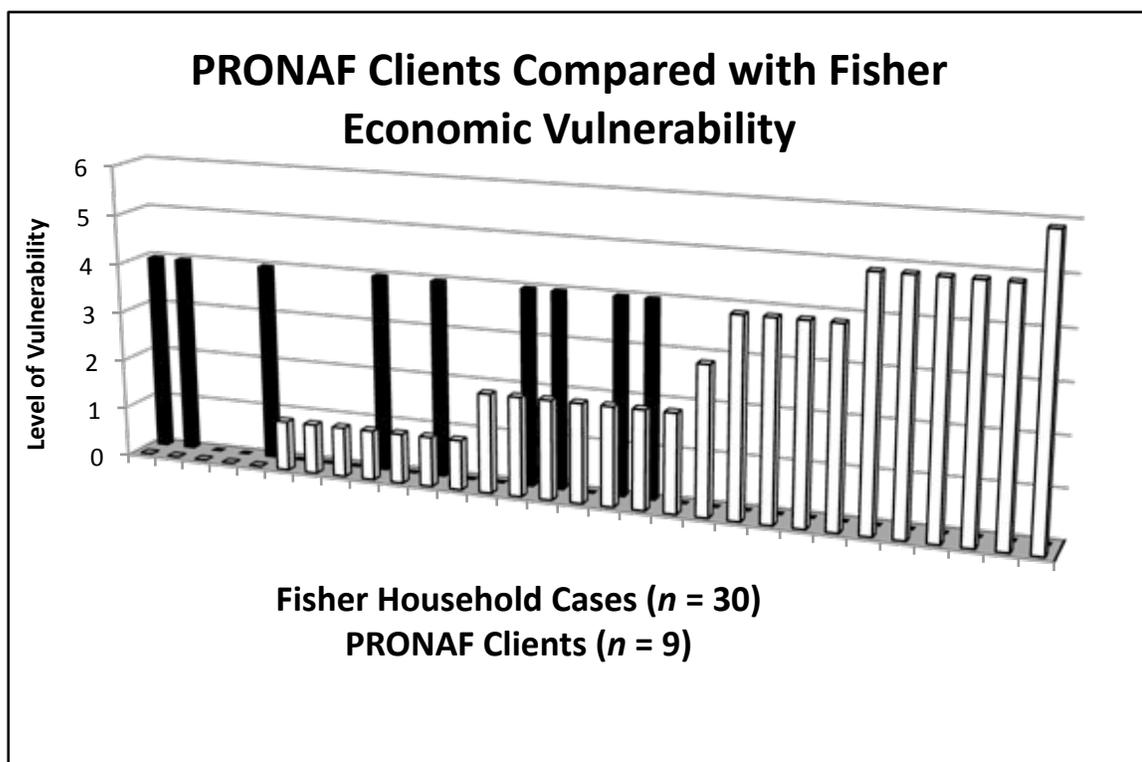


Figure 5.8. PRONAF Clients and economic vulnerability

Note: PRONAF clients in the depth series axis are illustrated in black bars and correspond with the household case in the front axis

It was evident that the most economically vulnerable households were often not included in these programs, and that these programs did not result in positive changes for the most vulnerable individuals and households. Tietze and Villareal (2003) provide a table (Table 5.3) that illustrates the characteristics of a lending institution that caters better to low-income borrowers and promotes loan recovery, sustainability and flexibility in part of the client. The majority of the recommendations provided run contrary to the current practices of PRONAF, demonstrating that this program requires many modifications before it may become effective as an instrument of rural development for the most economically vulnerable households.

Table 5.3. Lending methods for low-income and poor clients. (Source: Tietze & Villareal, 2003)

BOX 1

Principles of financially viable lending to poor entrepreneurs

Principle 1. Offer services that fit the preferences of poor entrepreneurs

These services could include the following:

- Short-term loans, compatible with enterprise outlay and income patterns
- Repeat loans – full repayment of one loan brings access to another. Repeat lending allows credit to support financial management as a process rather than as an isolated event
- Relatively unrestricted uses – while most programmes select customers with active enterprises, they recognize that clients may need to use funds for a mixture of household or enterprise purposes
- Very small loans, appropriate for meeting day-to-day business financial requirements
- A customer-friendly approach – locate outlets close to entrepreneurs, use simple applications and limit the time between application and disbursement to a few days
- Develop a public image of being approachable by poor people

Principle 2. Streamline operations to reduce unit costs

- Develop highly streamlined operations, minimizing staff time per loan
- Standardize the lending process
- Make applications very simple and approve on the basis of easily verifiable criteria, such as the existence of a going enterprise
- Decentralize loan approval
- Maintain inexpensive offices
- Select staff from local communities

Principle 3. Motivate clients to repay loans

Substitute for pre-loan project analysis and formal collateral by assuming that clients will be able to repay. Concentrate on providing motivation to repay such as:

- *Joint liability groups.* An arrangement whereby a handful of borrowers guarantee each other's loans is by far the most frequently used repayment motivation. Individual character lending can be effective when the social structure is cohesive
- *Incentives.* Guaranteeing access to loans motivates repayments, as do increases in loan sizes and preferential pricing in exchange for prompt repayment. Institutions that successfully motivate repayments develop staff competence and a public image signalling that they are serious about loan collection

Principle 4. Charge full-cost interest rates and fees

The small loan sizes necessary to serve the poor may result in costs per loan requiring interest rates that are significantly higher than commercial bank rates (although significantly lower than informal sector rates)

Source: Rhyne and Holt, as cited by Ledgerwood, 1999.

5.9 CONCLUSION

This chapter investigated the credit needs of fishers and the challenges related to loan availability and applicability in the context of small-scale fishers in the three study communities. Informal asset financing was a requirement for approximately 75 percent of fishers and there existed a substantial need for loans averaging \$R3500.00, leading to the conclusion that credit has played a crucial role in the livelihood strategies of fishers and a demand for a reliable credit or microcredit outlet exists. Interviews with fish market owners and the Bank of Brazil revealed that both of these locations used to offer loans on a wider scale. However, regrettably these lenders have been unable to enforce repayment, and loans have become increasingly difficult to acquire due to low repayment rates. Informal loans generally remained small, apart from owner financed boat purchases, which remained the most common form of asset finance. Cash credit of any substantial amount remained sparse in the informal sector. Fishers noted that fish markets used to be the most reliable form of sizable informal loans and that PRONAF was the only formal means of obtaining investment loans for most fishers. Fishers with connections to influential individuals in the banking sector or fisher's association, or ones that were less economically vulnerable were able to acquire formal loans with greater ease than those with few connections or highly economic vulnerability.

As it were, PRONAF was capturing the 'well-to-do' fishers, but failed to apply an approach to lending that catered to those who were economically vulnerable, due to the difficult guarantor requirement and high levels of bureaucracy that produced transaction costs that many fishers could not afford. Moreover, fishers were required to be members of the fisher's association in order to become eligible for a PRONAF loan, thus eliminating many of the most vulnerable fishers who were not paying association fees, while others who attempted to utilize a loan for non-fisheries related purposes were declined access. Credit in Paraty was not geared towards struggling fishers or those who were attempting to diversify their livelihood horizontally, thus perpetuating the issue of over-exploitation and crowding in the fisheries sector.

Chapter 6: Institutional Initiative for Addressing Poverty and Fisher Livelihoods

“To what extent will markets eventually solve the problem of financial exclusion, without government intervention?...the role and presence of the government is pervasive. The nature of its regulation of financial entities significantly affects the services they can offer and also the appropriateness of these services for those who are financially excluded.”

(Source: Kumar, 2005)

6.1 INTRODUCTION

Brazil is characterized by one the most unequal income distributions in the world and poverty remains a serious and present issue in many urban and rural areas most notably in the northeast. However, poverty in Brazil has declined substantially in the last two decades since the drafting of the constitutional letter of 1988, which included a new emphasis on social programs and economic growth in the country’s poorest regions and among the lowest income households. President Lula da Silva’s succession into office in 2003 has been noted as producing perhaps the most pronounced period of economic growth among the poorest households in the nation’s history. This chapter will begin with an analysis of Brazilian law and legislative process, followed by a look at poverty focused legislation since 1988 with special emphasis on legislations, constitutional amendments, and policies and programs of the Lula administration. The focus will narrow towards laws, policies and programs geared towards the expansion of credit in Brazil, with an analysis of the role of NGOs and community organization in the context of fisheries.

6.2 BRAZILIAN GOVERNMENT, CONSTITUTION AND LEGISLATIVE PROCESS

The current Federal Constitution of Brazil, active since October 5, 1988, is the supreme rule of the country, and is one of seven constitutions in the nation’s history (OAS, 2007). Elected in 1985, Jose Sarney passed a bill through congress, for the National Constituent Assembly (NCA) to draft a new constitution following over 20 years of military rule in a two party system that eventually saw the military voted out of power in 1985, upon losing support from the elites. The following era has become known

as the New Republic of Brazil, with the creation of a constitution that focused on the re-democratization of the country. The constitution ordered the country as a federative republic, formed by the union of the states, municipalities and the federal district. States were permitted to form their own constitutions, however, they were to remain under the laws and policies of the federal constitution. Although municipalities were not permitted to develop their own constitutions, the federal constitution of 1988 granted municipalities greater autonomy in addressing local problems and issues (OAS, 2007).

In spite of the new constitution of 1988, the following 20 years witnessed over 50 amendments and revisions to the constitution, a seemingly common practice in Brazilian politics (U.S. Library of Congress). The NCA stated that despite a renewed and detailed constitution, the rapid political and economic changes occurring in the country would inevitably lead to frequent revisions and amendments (U.S. Library of Congress). In order to pass laws and revise or amend the constitution, a bill of law must be put forward by a Congress House, known as the Originating House, and is either the Chamber of Deputies or the Federal Senate. Once a bill is forwarded, it can either be rejected or passed onto the other Congress House, known as the Reviewing House. There, the bill may be approved, rejected or amended and then be passed back to the Originating House (OAS, 2007). The likelihood of a bill to be passed before law is often dependent on the number seats the current president contains in congress, often leading presidents to seek party coalitions that would facilitate a congressional majority (Samuels, 2006).

Despite achievements in national law, the government of Brazil along with its economy remained fragile for the following seven years after the new constitution, with extreme rates of poverty, inequality and hyper-inflation. Upon many failed attempts to control inflation, Fernando Henrique Cardoso, the previous Minister of Finance and then elected President, successfully passed the 'Plan Real' through congress in 1995, which replaced the former national currency, the Cruzeiro Real, and rid the country of inflation in several months. However, neoliberal policies by Cardoso, that sought to privatize many public corporations led to his disfavor, along with his inability to address income inequality across the country. A common misconception within Brazilian politics has maintained that poverty should be combated by means of economic growth through the neoliberal economic idea of the 'trickle down affect,' in which liberalized markets would create higher investment and thus greater employment opportunities for the poor (Arbache, 2003). Arbache (2003) reported that Maia (2001) found a 1.6 million loss in

jobs due to international trade and an additional loss of 3.6 million jobs due to technological advances from 1985 to 1995. The market favoured highly educated workers and the poorest and lowest educated households were adversely affected the most. Ricardo Paes do Barros (2000) from the Institute of Applied Economic Research insisted however, that high poverty rates were more the product of the extreme unequal distribution of income and opportunities, and that high rates of growth would have limited affects of poverty reduction (Paes de Barros et al. 2000). His diagnosis suggested the need to implement income and wealth distribution policies regardless of economic growth. Arbarche (2003) argued that economic policies aimed at poverty reduction would require a focus on the markets in which low income persons operated and to investigate potential channels for initiating market reforms in their favour.

Despite the neo-liberal economic policies throughout Cardoso's terms poverty reduction in terms of public programs was not ignored, as several new public programs became federalized during his years in office, such as the 'Bolsa Escola,' an education fund for low income families, as well as increased support for low income rural households through the creation of PRONAF in 1995. Studies by (Ram, 1990; Lam and Levison, 1992; Barros and Mendonça, 1995; Green et al. 2001) have revealed that the high rates of inequality across the country may have been explained by an unequal provision of education, accounting for as high as 48 percent of salary inequalities across the country (Arbache, 2003).

In his fourth attempt at office, President Lula da Silva of the '*Partido dos Trabalhadores*,' or Worker's Party (PT) was elected with a minority government, upon a campaign centered on dealing with the nation's poverty and inequality. However, winning presidency was only one of the multiple obstacles that President Lula and the PT would face before passing promised legislation. President Lula was forced to perform a balancing act between obtaining a majority government and continuing to please his base (Samuels, 2006). President Lula in the 2002 elections won 17.7% percent of the seats in Chamber of Deputies making it the largest party. However, his electoral coalition only won 25 percent of the seats in the Chamber and 29 percent of the seats in the Senate. In order to reach the 60 percent of seats in legislation required to pass amendments, President Lula was required to reach outside his presidential coalition, even to parties that supported Cardoso's neoliberal policies. President Lula formed a majority by bringing together eight parties from across the political spectrum, making it one of the most

fragmented and ideologically diffuse in all of Latin America (Samuels, 2006). Couto and Arnates (2005) stated that despite party system fragmentation and multi-party cabinets, presidents have managed to pass dozens of legislative amendments since 1988. Upon reaching a governing majority of 60 percent of seats in legislature, President Lula began passing legislation regarding major reforms to the financial system, pension, and the tax system, among others (Couto and Baia, 2006).

6.2 THE ROLE OF NEW LEGISLATION AND CONSTITUTIONAL AMENDMENTS IN POVERTY REDUCTION

Prior to analyzing amendments to the constitution geared towards poverty reduction, it will help to observe some of the broader principles of the Brazilian Constitution that has addressed the social order as presented in Title VIII of the 1988 constitution (Presidencia da Republica: Casa Civil). It is important to note that despite formalized articles regarding social policy and government obligation within the constitution, in practice many social obligations have not been met or have only been met in part. Article 194 of the constitution states that “Social welfare comprises an integrated whole of actions initiated by the Government and by society, with the purpose of ensuring the rights to health, social security and assistance,” and Article 195 states that “Social welfare shall be financed by all of society, either directly or indirectly, as provided by law, with funds coming from the budgets of the Union, the states, the Federal District and the municipalities.”

Article 196 expresses the duty of the state in partnership with municipalities to provide free healthcare for all citizens. The principles of the constitution regarding healthcare set out to form the Unified Health System (SUS) in 1988 with the goal of increasing the overall quality of health for all citizens, with the priorities of reducing child mortality, motherhood mortality, and mortality by non-transmittable diseases such as malaria. Article 203 states that “Social assistance shall be rendered to whomever may need it, regardless of contribution to social welfare and shall have as objectives: I - the protection of the family, maternity, childhood, adolescence and old age; II - the assistance to needy children and adolescents; III - the promotion of the integration into the labor market; IV - the habilitation and rehabilitation of the handicapped and their integration into community life; V - the guarantee of a monthly benefit of one minimum wage to the handicapped and to the elderly who prove their incapability of providing for their own support or having it provided for by their families, as set forth by law.” Article

205 states that the provision of education is the obligation of the government and all will retain equal access to public education. Casual conversations with many citizens from Rio de Janeiro State as of late 2010 revealed that most middle or upper class families utilize both private health care and education due to the severe lack of quality and resources provided by the government in the public institutions. Interesting to note is that universal access to education does not necessarily entail equal opportunity.

Despite the long road ahead for several public institutions in Brazil, major headway was made in economic growth and poverty alleviation in the country in the last eight years during the term of President Lula da Silva. Major priorities towards combating poverty included but were not limited to increasing enrollment in primary schools, raising the poorest households in country out of extreme poverty, ending mal and under nutrition, and expanding financial services including credit and savings options to low income and rural households. Several programs that proved affective in reducing poverty during Lula's terms were initiated during or before Cardoso's terms in office, but many were either organized better and/or provided with greater funding during Lula's terms.

Examples of incentives purely founded and operated by the federal government were the credit lines PRONAF and PROGER. Programs and organizations operated in partnerships with non-governmental agencies were most commonly found in regions with high proportions of poverty per unit population and less common in sparsely populated regions with marginal levels of poverty. However, with the succession of President Lula da Silva into power in 2002 several existing programs received additional financial, despite some of these regions containing low levels of poverty, and several other programs designed to combat poverty were founded an implemented in the regions with the most profound need for assistance.

One of the public programs initiated by President Lula that has received the most attention nationally and internationally for its contribution to poverty alleviation is the 'Bolsa Familia,' translated as Family Allowance. The newly formed Brazilian Ministry of Social Development during Lula's first term in office described Bolsa Familia as a direct income transfer program that contained conditional elements directed at households living in poverty and extreme poverty (The World Bank Group, 2010). The program integrated the program 'Fome Zero', translated as Zero Hunger, aimed at ensuring the human right to adequate food, promoting food security and nutrition to the population

most vulnerable to hunger. Bolsa Familia served more than 12 million of the lowest income households across the nation and provided cash transfers ranging from \$R22.00 to \$R200.00 according to the income of the household and the number of dependants (Ministry of Social Development, 2010). The Fourth National Monitoring Report on the Millennium Development Goals (MDG) reported a reduction in extreme poverty from 12 percent in 2003 to 4.8 percent in 2008.

The program incorporated the program 'Bolsa Escola,' translated as Education Fund and provided allowances to the lowest income families nationwide provided that they enroll their children in school, thus attempting to address present issues of extreme poverty as well as long term development issues through capacity building for the next generation (Ministry of Social Development). The management of Bolsa Familia was shared by the federal, state, and municipal governments and the federal entities in charge of monitoring and expanding and implementing the program were established based on the Law 10.836/4 and regulated by Decree No. 5.209/4 (The World Bank Group, 2010). The program received technical assistance and some funding from the World Bank, who reported that 94 percent of the funds reached 40 percent of the nation's poorest, which were reported spending the majority of the cash transfer on food. The right to food for all was on February 3, 2010 adopted as an amendment to the constitution through the Constitutional Amendment Project 43/2003 and will be included in Article 6 in the Supreme Law, which already includes other rights, such as the right to work, good health, education and social security (FIAN International).

One factor playing a fundamental role in the financing of public programs aimed at combating poverty and inequality was the wealth produced from Brazil's natural resources, for which the nation is rich, and possibly getting richer. For Brazil, the year 2007 was marked by the major Tupi Oil Field discovery 6000 meters under the Atlantic Ocean floor, the largest discovery in Latin America in 30 years (Petrobras Annual Report, 2008). However, despite economic liberalization policies imposed by President Cardoso from 1995 to 2002, President Lula has moved towards state dominance and veto authority over the Tupi Oil Fields with Petrobras, a state owned oil company, as the main player and beneficiary of oil revenues, thus attempting to transfer the oil revenue back to the people (The Economist, 2009). On March 10, 2010, the lower house of congress passed four bills and an amendment stating the authority of Petrobras in oil contracting along with the creation of Petro-sal, a government representative in production sharing and

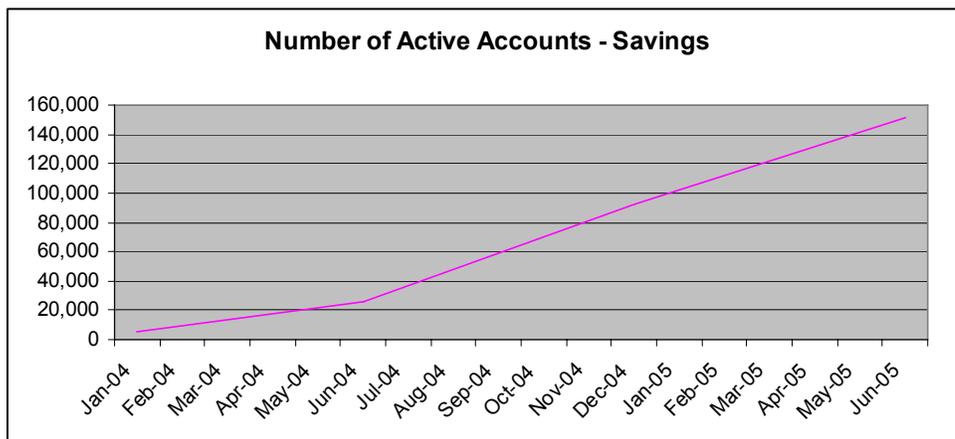
contract concession. The government was guaranteed of a minimum share of 30 percent of profits. President Lula has created a ‘Social Fund,’ a tool he plans to use in order to transfer oil wealth to the nations poorest in an attempt to address inequality (The Economist, 2009).

6.2.1 The Expansion of Financial Services

One of the most fundamental issues in President Lula’s election campaign in 2002 in regards to combating poverty and inequality was the expansion of financial services for low-income earners across the country. Within one year in office Lula had create several new laws pertaining to credit expansion and the increased availability of savings programs. One of the first changes was CMN Resolution 3106 of June 25, 2003, which eased membership requirements for credit cooperatives, and permitted membership from an array of occupations as opposed to the previous system of homogeneous occupational membership. Regulation changes were pertinent to communities with populations of up to 100,000 inhabitants, due to the government’s purpose of expanding financial services to sparsely populated regions underserved by formal banking institutions (Kumar, 2005). Resolution 3.188 of March 29, 2004 enabled credit cooperatives to receive funds from rural savings programs in order to expand their outreach. Before this resolution, only public banks were permitted to acquire such deposits (Serpa, 2008). Rural savings program were government programs that provided resources for agricultural development initiatives.

Law No. 10735 of September 11, 2003 and CMN Resolution 3109 and 3128 of July 24, 2003 and October 30, 2003, respectively, created new mechanisms for the expansion of microfinance operations to low-income earners ((Consultative Group to Assist the Poorest (CGAP); Kumar, 2005)). Under these new regulations, all commercial banks in Brazil were required to allocate a minimum of two percent of sight deposits to microcredit programs, or alternatively, the two percent would be transferred to a government reserve and kept without interest paid to the bank. The National Monetary Council of Brazil enforces this law. Resolution 3,211 of Article 9 of Law 4,595 stated that low-income earners were eligible for special deposit accounts for which they would pay no service fees, under the condition that deposits did not exceed \$R1000.00. If deposits exceeded this amount the account would be closed until further explanation, or would be transferred into a regular deposit account with service fees applied (CGAP). Figure 6.1 shows the massive increase in simplified savings accounts in Brazil between

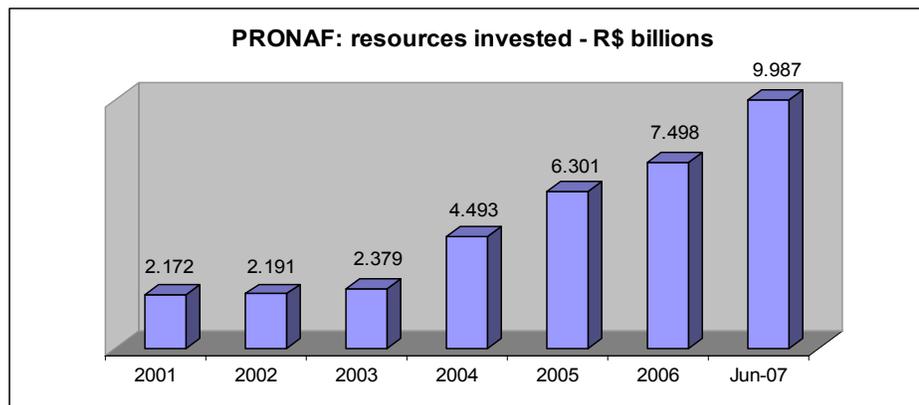
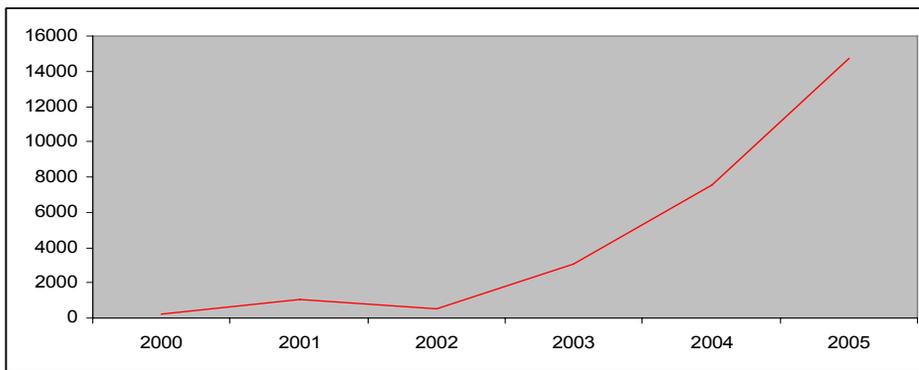
2004 and 2005, providing evidence for a strong demand for savings accounts among low-income earners. Law No. 10.820 of 2003 provided incentives for low-income wage employees to utilize loans through the government’s partnership with employers through which loan payments were to be directly deducted from paychecks, thus ensuring timely repayment and reducing transaction costs for borrowers (Serpa, 2008).



Source: Banco Central do Brasil

Figure 6.1. Increase in simplified savings accounts in Brazil. (Source: Serpa, 2008)

Many of these new legislations have had profound impacts on credit expansion and provision, especially in rural areas. The government stated that public banks required greater involvement within small credit provision and that they needed to become closer to potential low-income borrowers through an increased branch network and the participation of branches not previously involved in sector based credit (Serpa, 2008). Since the year 2003, the active microcredit client portfolio in Brazil increased by over 288 percent, due to the increased funds for sector-based and microcredit programs. Figure 6.2 illustrates the effects of legislation under President Lula in regards to credit expansion for sector based and microcredit programs, particularly among public bank programs such as PRONAF and Crediamigo.



Source: Ministério da Fazenda

Figure 6.2. Expansion of Crediamigo and PRONAF into Lula’s term in office. (Source: Serpa, 2008). Crediamigo’s net earnings (R\$ ‘000) between the year 2000 and 2005 is shown above.

As Serpa (2008) stated in his analysis of policies and programs in the Brazilian context, the goals of the Lula government regarding poverty reduction and credit expansion throughout Brazil were largely met. Government funding for sector-based and microcredit programs such as PRONAF and Crediamigo was increased exponentially, and spread into increasingly isolated regions of the country through an improvement and expansion of branch networks. In addition, simplified saving accounts were made accessible to many more low-income households. All of the major changes in policy surrounding poverty reduction throughout Brazil in the last eight years were the result of resolutions, amendments and new legislation to the national constitution, which at the federal level added new capacities to the state and municipal levels in addressing regional and local issues.

6.3 WHERE TOP-DOWN MEETS BOTTOM-UP

Figures in the previous section illustrate a dramatic increase in sector-based and microcredit activity in Brazil in the last eight years; however, despite seemingly major successes, a closer analysis of the relevant literature on credit in the Brazilian context as well as field work conducted in Paraty revealed several flaws in the current credit development paradigm. As noted in the previous section, decisions made at the federal level may facilitate growth and development among the poorest households; however, distant top-down approaches to credit development have taken their toll in the country and have led to major challenges, many of which were discussed in the previous chapter.

Despite positive intentions on the part of the federal government in expanding credit access, top-down government policies may not be enough to create a well functioning sector-based and microcredit market. Serpa (2008) argued that obligatory policies on commercial banks in terms of mandatory allocation of funds to microcredit programs has not worked well, and that private banks were increasingly depositing the required funds into the federal reserve without interest, understanding that their funds, if not dedicated to a functioning and sustainable program will accrue losses. Kumar (2005) described how government banks, which develop credit programs without non-government or private partnerships, suffer major inefficiencies and rarely meet their objectives in development due to their incapacity to be more than a bank. Their inability to provide functions resembling those of NGOs in regards to technical support and loan follow up lead most public banks to search for the highest income borrowers in a given sector, due to their fear of not maintaining the capacity to deal with defaulters. Kumar stated that public bank programs such as PRONAF often create difficulties within the loan process in order to discourage applications, through difficult and bureaucratic application processes.

Despite the Bank of Brazil been the largest bank in South America with the most extensive rural credit program (PRONAF) in Brazil, the Central Bank of Brazil made note of its non-performing loans and its need for non-governmental leadership on its council with a true social obligation (Kumar, 2005). In terms of accomplishing development goals, the microcredit program Crediamigo through the Bank of the Northeast, which currently captures over 60 percent of all microcredit activity in Brazil, is often referred to as the microcredit ‘poster child’ in the country. However, the

development, support, funding, maintenance, loan procedures and follow-up of this program are fundamentally different from that of PRONAF (Kumar, 2005).

The Bank of the Northeast was created in 1952 with the purpose of addressing the poverty of the poorest region in the country, the northeast, which explains its rationale behind creating the first microcredit program in Brazil associated with a state owned bank (Lyra, 2006). With its well-defined objectives of fostering economic inclusion and decreasing social inequalities, the program received technical support from ACCION International and from the CGAP in its conception and used as benchmarks the Banco Sol, of Bolivia; Porto Sol, from Brazil; Banco del Estado de Chile; Mibanco, from Peru and Bank Rakyat Indonesia (BRI) (Lyra, 2006), a program highly esteemed by Kumar (2005) for its sustainable and effective policies that make it a global leader in microfinance. One of the strengths of the Crediamigo program from its early stages was the adoption of 'best practices' methods, such as targeting the informal sector, solidarity group lending, provision of training for newly formed groups, charging market interest rates to cover loan costs and technical support, providing small loans initially and then progressing to larger ones, and providing incentives for loan payments and penalties for late repayment (Lyra, 2006). The point is that Crediamigo was created and supported by institutions that contained a social obligation in guaranteeing a functioning and sustainable program that met its objectives in addressing the poverty around it. In view of the fact that public funds finance both PRONAF and Crediamigo, there exists an urgent need to apply a more uniform approach in credit delivery and interest rates in such programs (Kumar, 2005).

Kumar (2005) explained that one of the principal issues surrounding state-owned, rural financial institutions such as PRONAF was the lack of institutional incentives that held management accountable for their performance, resulting in financial indiscipline and poor loan collection. The Program for the Generation of Employment and Income (PROGER), a state run microcredit provider also faced many similar issues as PRONAF. Increased funding to PROGER in the 1990s resulted in an increase in 78 percent of first time borrowers, however, 60 percent were not considered to be a part of the low-income bracket. PROGER like PRONAF was operated separate from other microfinance technologies and although operated through the Bank of the Northeast, suffers much higher default rates than Crediamigo, suggesting that the implementation of microfinance

technologies during the program's design, and operation can make a difference (Panente, 2003).

Panente (2003) stated that several state run credit providers, upon suffering a certain number of defaulted loans have left the region, a possible move stated by the PRONAF agent at the Bank of Brazil in Paraty. Ironically, the government web page for PRONAF stated that the program suffered much lower defaulted loans than most other credit providers in the country (Ministry of Rural Development). Panente (2003) described as well, how banks, both private and public were designed to work with higher educated and higher income clients and despite the manager's and director's wishes, most state-owned banks have to operate according to conventional logic, which means running heavy cost and highly bureaucratized structures that are not compatible with microfinance loans. When loans conducted by the government are run through programs such as PRONAF, the program does so after negotiating risks for their operating costs and transfers the risks to the government, thus proving that their operating logic is not that different from privately owned banks (Panente, 2003).

Citing Cristen and Rosenberg (2000) who took examples from over a dozen highly successful state-owned microfinance programs, Kumar (2005) stated that opinion was growing that MFIs and NGOs required greater integration into formal financial institutions, in order to facilitate greater outreach and effectiveness, as well as to facilitate the down scaling of the other commercial banks into the low-income sector. Moreover, they argued that commercial banks and non-governmental entities both contained advantages in microfinance delivery but often remained ineffective or inefficient without the other. Commercial banks with their large capital and funding, along with their networks of branches make them mobile and expansive, but remain hindered by their lending methodologies and accountability in loan recovery, for which MFIs specialize better (Kumar, 2005). Serpa (2008), argues that competition is often the result of their separation, due to the subsidized interest rates notoriously charged by public banks, which crowd out the public sector with unfair competition derived from interest rates that few MFIs could compete with, thus reducing their much needed outreach.

However, a new paradigm has entered the microfinance world since early 2010, with the sudden microcredit crisis in South Asia, among other regions. South Asia has become extremely saturated with non-state MFIs which has resulted in severe competition among institutions, leading agencies to target many of the same households,

charge high interest rates to cover poor lending practices and its subsequent losses due to household over indebtedness, and finally a call for major bailouts by the government (Global Politics & Political Economy, March 16, 2010). The epicenter of the crisis according to Governance Across Borders (October 19, 2010) may be witnessed in Andhra Pradesh, where 30 borrowers committed suicide due to over-indebtedness as a result of exurban interest rates charged by MFIs. The article cited Bala Murala Krishna from Asia Sentinel who shamed India's microlenders as "loan sharks", and asked, "What is society to do if for-profit microfinance, in its quest for ever-higher profits, pushes the boundaries of usury and becomes exploitative?" Many MFIs in effect, were not operating as tools to fight poverty, but to generate profit, putting profit over people. MFIs have operated in South Asia for years with few government regulations, but this is about to change. On October 14, 2010, the government of Andhra Pradesh made it mandatory for all MFIs to register themselves, declare their effective interest rates, increase their transparency, and terminate all coercion used to recover loans. These new regulations have put many MFIs at risk of collapse, resulting in their request for assistance to keep them afloat (Governance Across Borders, October 19, 2010).

The root of the issue may be traced to increased competition between capital strong MFIs and the entry of well-grounded commercial banks with their mass-marketing skills and technology. Jose Ramon, the finance director at Finca Peru, a MFI in Peru, stated that the greatest risk to the industry was indebtedness due to over-competition within the industry and a lack of regulation to limit this behavior, alluding to the reaching issue in Andhra Pradesh (CSFI, 2011). The article by CSFI cited an American investor who stated that;

"While growth of the industry is good in terms of extending access and creating innovative products, if it leads to over-indebtedness via harassment, then microfinance is not delivering on one of its main objectives: to create real and sustaining social and economic value for low-income persons."

A constant issue faced by MFI has been the growth objective, leading lending agencies to prioritize growth and sustainability over effective product deliverance. This objective has often led MFIs to target the same households as their competitors (CSFI, 2011).

Perhaps the greatest weakness within the MFI industry has been loan marketing, in which low-income households have been encouraged to take loans. For this reason partnerships between MFIs and state banks may be one of the most effective micro-lending methodologies. Caution should be exercised regarding interest rates, as subsidized interest rates charged by PRONAF have generated enormous government losses, often at \$R450.00 on every \$R1, 000.00 lent. Nonetheless, interest rates must not be exploitative and interest rate charged at market rates or slightly lower many limit the competition that has devastated southern India.

Third party partnerships with public banks are not only practical on an economic and efficiency level, but on the social level (Panente, 2003). Credit officials from public banks are generally quite distant from the reality of low-income borrowers, and MFIs generally possess greater capabilities in the area of group lending and social capital guarantee methodologies, thus substituting the lack of guarantors and collateral at the community level. Crediamigo, which operates in the Northeast of Brazil, has noted the highest repayment rates among the lowest-income borrowers when they form social accountability. Thus, trusting relationships between borrowers represented as social capital is transformed into a valuable asset. Panente argued that the greater the level of social capital and community contribution and control in credit design, the greater probability that the financial products would fit the community's demands. Panente citing Sachs (2002) stated that it is the social and organizational innovations that are at the center of technical and economic transformations, which are capable of positively altering the livelihood strategies of low-income households and add value to their resources.

6.3.1 Development that Goes Beyond Credit Provision

Social organization of fishers may facilitate more than access to well-developed financial services. Affective and profitable fish marketing is at the center of the livelihood challenges that many small-scale fishers face on a daily basis. Mosley (2001) argued that government subsidized credit schemes often focus on the symptoms of market failure and do not address its root causes. However, as interviews in Paraty revealed, social organization is not an easy process or even the norm within most fishing communities in this region, and third party organizations such as NGOs or fisher associations maintain the potential to assist in capacity building through fisher organization on the local level.

As an example, fourteen women in Betume, Brazil revealed the positive effects of community organization with federal and non-governmental support. The women established the Women's Association of Betume with the purpose of adding value to their fish products through value added processing, and selling at higher levels of the value chain (FAO, 2001). The federal government through the Development Company for the Sao Francisco and Parnaiba Valleys (CODEVASF) supported the women in the establishment of processing and ice plants, which were funded by the Common Fund for Commodities and implemented by INFOFISH. The viability of the fish-processing establishment would have been in question in its onset without the support of the federal government and partnerships with grassroots organizations (FAO, 2001).

The FAO article stated that examples of small-scale fisheries arrangements throughout Latin America suggests that depending on the levels of community and fisher organization, fishers may viably sell their products higher in the value chain, such as directly to restaurants and consumers. The article argued that ecologically speaking, most coastal regions in Latin America have been exploited to their highest potential, and that the priority in terms of assisting the most economically vulnerable fishers should be to consider the possibility of selling an equally sized catch for a higher price, rather than encouraging the expansion of the sector through the professionalization of the smallest scale fishers. The FAO article stated that the key to higher prices is to shortcut as many elements as possible within the distribution chain and to make use of existing marketing information.

As discussed in earlier chapters, PRONAF in Paraty as well as in other regions throughout Brazil has tended to capture the wealthiest of the households in its sector-based programs, while solutions to vulnerability at the lowest level may not be addressed purely by means of credit expansion, especially through sector-based credit which, provided creditworthiness, offers struggling fishers only livelihood strategies that further deepen them in an industry that is struggling to support its current users. Roth (1997) revealed similar findings regarding microcredit as Mosley (2001) stating that credit has often been used to treat the symptoms of poverty rather than the causes, which they argued has resulted from powerlessness at the household and community level. Roth stated that federal and state governments have often applied a 'blueprint approach' to development and applied credit to all situations of vulnerability and poverty.

6.4 CONCLUSION

An analysis of government policy and legislation and its direct effects on extreme poverty, education levels and credit access in Brazil, reveals a powerful correlation between decisions made at the federal level and transformations at the grassroots level. Despite many poverty focused policies and programs implemented pre-Lula, the last eight years during Lula's presidency has been highly noted for substantial decreases in poverty throughout the country. Of particular notice during Lula's term was the expansion of sector-based credit and microcredit as a result of government legislation regarding obligatory funding for these programs via commercial banks. However, a distinction should be drawn between credit programs operated and conceived through non-governmental partnerships and those run almost entirely by government banks.

This chapter concludes that credit programs run mainly by public banks such as PRONAF remain inefficient, unsustainable and lack technical support due to heavily subsidized loans that have failed to capture the most economically vulnerable households, as well as a lack of support from MFIs and NGOs that retain a higher social obligation than highly removed public bank credit officers. Rather, partnerships between non-governmental entities and public banks may produce the highest level of results, exemplified by the Bank of the Northeast's Crediamigo program. Despite the need for a more integrated approach to credit delivery within PRONAF, and within development in general, vulnerable fishers along the southeast coast do not comprise a number or concentration that has been able to prompt the involvement of non-governmental agencies.

Their involvement in creating alleyways for the horizontal diversification among the most economically vulnerable fishers would greatly improve both the livelihoods vulnerable households and those fishers who are well established in the sector through reduced competition. This would include introducing microcredit-lending methods that are more feasible for the most economically vulnerable households that provide investment opportunities, which increase their livelihood security. Nonetheless, caution must be exercised in addressing rural and coastal development, which have often failed to address the root causes of economic vulnerability at the household and community level due to state, and federal incentives that have applied credit expansion as a 'blueprint approach' to development. Rather, grassroots approaches at the community level possess the potential to address the market failure that has led to increased vulnerability.

Chapter 7: Summary Conclusions and Policy Recommendations

7.1 SUMMARY

The project was about understanding how the use credit influenced the livelihood strategies of fishers, as well as the possible implications for the sustainability of the coastal fisheries in the context of the Municipality of Paraty, along the southeastern coast of the Rio de Janeiro State, Brazil. Methods for data acquisition included semi-structured interviews with 30 fishers from three communities, six semi-structured interviews with fish market owners from all three communities, as well as an interview with the president of the fishers' association and the PRONAF agent at the Bank of Brazil. These interviews were conducted over a four-month period from September to December 2010. The researcher used both qualitative and quantitative methods for analyzing the data, such as Microsoft Excel for data on small-scale fishers and manual transcription for the remaining interviews in the project. The analyzed data generated results that were contrasted with existing literature and led the researcher to draw conclusions, and these conclusions follow the summary.

7.2 CONCLUSIONS

The research project was defined as a case study due to its detailed exploration of processes and programs in a defined context. The case study in Paraty benefited from prior research on sector-based and microcredit in the context of resource management and used the research study to test current theories on credit policy and fisheries management. The study included empirical evidence to support theories, however, being context specific did not contain generalizations for other contexts. The study did show however, that the Sustainable Livelihoods Framework (DFID) was a great resources for bringing the research results into a theoretical model for which several theories on sustainable livelihoods were confirmed.

The principal conclusions reached from this study are that approximately one third of fishers were considered economically vulnerable, and conducted livelihood strategies based on a need to raise their income. The federal government has attempted to address the small-scale fishing sector through the introduction of credit schemes that would encourage investments which may raise productivity and fisher incomes. However, formal credit has not reached the most vulnerable of fishers, and has

encouraged the enhancement of fishing capacity and increased access to the fishing sector through loans, despite the prominent belief by fishers that the fishing sector was declining due to over-crowding and overexploitation.

7.2.1 Income Related Challenges Faced by Small-scale Fishers

Existing research on small-scale fisheries management in Brazil by (Diegues, 2006) and in the southeast coast of Brazil by (Begossi, 2004) and (Begossi et al. 2010), along with fisher interviews in the three communities of concern, have revealed that small-scale fishers faced several disadvantages within the fishing industry that have left them increasingly vulnerable in terms of natural and financial capital. High levels of government support for large-scale industry over the last 50 years has changed the face of the industry from a majority of small-scale fishers along the southeast coast to a majority of fish catches originating from industrial fleets. Ninety-five percent of small-scale fishers in this study expressed that their own fish catches have declined, arguably due to the overexploitation of the resource from over-crowding of fishing boats at sea. Fishers believed that a reduction of fishing boats was required along with a more balanced approach to supporting small-scale and large-scale fishing. One third of small-scale fishers were considered economically vulnerable, and the smallest scale fishers faced a challenge by which their small economy of scale and lack of resources rendered them powerless in conventional fish marketing, along with limitations in fish access.

In light of local level beliefs and opinions regarding the state of the fisheries along this coast, the federal government of Brazil is attempting to raise fisheries production nationally in order to meet domestic demand. Subsidized credit is one method that the federal government has used to endorse investments that would yield higher levels of production. This topic requires policy makers to analyze each region specifically, due to differing levels and scales of fishers in various region. Fish production along the southeast coast of Brazil is dominated by large-scale fishing fleets, where as small-scale production dominated the region only 40 years ago. The sustainability of the fishing sector in this region is largely dependent on policies effecting the large-scale fishers and their fishing quotas and licensing. Small-scale fishing has proven to be efficient in terms of potential production, and the federal government has chosen to raise levels of support for these fishers. However, will this coastline support raised levels of fishing intensity? Are governing bodies, fishers and biologists functioning well enough within the fishing sector to immediately endorse higher levels of fish production? Should non-productive

fishers be filtered out of the fishing sector, and where would they go? Can the value of fish be raised for small-scale fishers, and how?

7.2.2 The Livelihood Strategies of Fishers

Thirty-five percent of fishers embarked on the strategy of selling their fish to restaurants and consumers in order to capture a higher value for their product vertically in the distribution chain. Since a large clientele of fish markets in Paraty was restaurants and individuals which purchased fish for up to double the buying price from the fisher, many fishers have chosen to raise their income via alternative marketing strategies. However, fishers perceived alternative fish marketing as risky and sometimes unreliable, therefore an act of desperation for many of those who utilized this strategy.

Other strategies utilized by fishers to decrease their vulnerability and raise their prospects for income generation was to diversify horizontally into other sectors, namely into tourism along this coast, and vertically, by means of acquiring a boat of higher fishing capacity and possibly tourism. Approximately 40 percent of the fishers had made plans to, or had already acquired the capacity for tourism throughout their career due to the increasing prospects during the summer months, and during the closed fishing season for shrimp, for which a minimum government wage did not supply the household needs. Fishers with larger capacity equipment almost always sold to fish markets and many under a fixed arrangement whereby they always conducted business with the same buyer. The benefit of this arrangement included an ease of marketing, provision of ice and diesel at the dock, and a potentially trusting relationship with an individual that often resulted in simple credit acquisition.

The owners of mid-sized diesel boats were the most common suppliers to conventional fish markets, as well as the most likely to diversify into tourism. These fishers contained the most options in terms of livelihood diversification, and made up the largest group of fishers in the fishing communities of concern at over 50 percent. Results revealed high rates of horizontal livelihood diversification into other sectors, however, tourism was only within the reach of higher income fishers and the use of government subsidized loans were not permitted for investment into other sectors. Fishers often used government loans to refurbish their current boat, giving it tourism capacity, however they were required to lie on their loan application and to remain in the fishing sector with a valid license.

In terms of livelihood diversification, the majority of fishers were involved in other sectors to some degree. However, fishers differed in their reasons for diversification. Wealthier fishers generally diversified into tourism, which is a lucrative sector in this region, and an option that could be considered opportunistic. Economically vulnerable fishers also diversified into sectors such as construction or choose to sell higher in the fish value chain, however, many of these decisions were out of desperate need for immediate income.

7.2.3 The Credit Needs of Fishers

Approximately 80 percent of fishers acknowledged that loans or financing for assets played a key role in successful livelihood strategies, especially those loans under \$R5000.00, mostly utilized for boat repairs or used to supplement existing savings in order to conduct larger purchases outside of their current saving capacities. According to fisher surveys and results by Hanazaki (2010), most informal loans remained below \$R5000.00 and originated from family, friends. Higher end loans were conducted mostly through formal banks, including the Bank of Brazil's PRONAF program. Fishers demonstrated that loans for working capital and large investments, although rare in their fishing career played a fundamental role in replacing poorly running fishing equipment and acquiring large investments such as boats. Sixty-five percent of fishers financed their fishing gear at some point and 75 percent financed their current fishing boat with the majority using credit to supplement their savings. Between 20 and 25 percent of fishers never used loans as part of their livelihood strategies due to their ineligibility for loans or their preference for savings.

7.2.4 The Challenges of Obtaining Credit

Without any organized informal credit institutions and a difficult formal credit option that has closed to new applicants due to high default rates, many fishers who required loans have been unable to acquire them. Thirty percent of interviewed fishers had in the past attempted a PRONAF loan and were denied. Fishers stated that their lack of success obtaining formal loans was largely due to the complicated bureaucratic process of applying, a lack of collateral or co-signer, or their desire to use the loan for purposes outside the fishing sector. The deteriorating reputation of fishers in regards to loan repayment has resulted in a limited number of informal loan options from fish markets and a limited ability to acquire a co-signer for their formal loans. In general, the demand

for credit in Paraty has not been met and many fishers believed that this is negatively impacting their livelihood strategies.

Evidence in Paraty and other regions throughout Brazil confirmed that sector-based credit programs often did not capture the lowest income bracket among the fishing and agricultural sector and this was clearly evident in Paraty. In terms of federal policies aimed at improving the lives of the lowest income households through credit expansion, loans were still not reaching the most vulnerable fishers. The challenge faced by many fishers was that there existed no reliable form of credit in Paraty, and informal loans often did not fit the borrowers credit needs. Despite positive federal intentions in supporting the fisheries sector, the program has remained inaccessible to the most needy fishers and households, and has been unable to exceed the services provided by commercial banks.

7.2.5 Summary of Conclusions

The livelihood strategies undertaken by fishers in Paraty suggest that lucrative strategies were largely made by the more privileged fishers, who had more financial flexibility, and easier access to credit. Economically vulnerable fishers lacked flexibility and were generally ineligible for cash credit, trapping them in their current situation, with little ability to raise their capacity for higher income generation. In terms of credit outreach for fishers throughout the country, large-scale fishers and affluent small-scale fishers were the only ones who maintained access to credit markets. Sector-based credit schemes were designed to reach specific sectors due to the belief that these sectors were under served by conventional financial markets as well as to encourage investment. However, most formal loans through government programs have been received by individuals who maintained eligibility for conventional bank loans. No program exists with the capacity and human resources to address the credit needs unique to the economically vulnerable small-scale fishers.

Regarding credit access and sustainability, loans for fishers in other contexts around the world are commonly utilized to expand fishing capacity, however, most fishers in Paraty were not using credit to expand their fishing operations. The most common formal loan size (\$R3500.00) was used to replace non-functioning fishing assets or to supplement savings for loans devoted to increased tourism capacity. Fishers have been left increasingly vulnerable due to a lack of emergency credit for repairs and their inability to move into other sectors.

7.3 POLICY IMPLICATIONS

Principal implications, in terms of fisheries related policy include the need for a focus on livelihood development and value adding processes rather than fisheries development, and the need for a multi-sector credit option, like Crediamigo. This type of option would have an NGO as an honest broker, low levels of bureaucracy, community based guarantee systems, and near market interest rates that cover lending costs. Moreover, support for fishers in Paraty requires a greater focus on the real challenges experienced by the most economically vulnerable, and not on government production goals within the sector. Growing incomes within nearby urban areas in Rio de Janeiro and Sao Paulo States are creating a rapid supply of tourists to Paraty and is creating new job opportunities within most coastal communities, from accommodation, restaurants to tours. This change in dynamic is important for the livelihood strategies of small-scale fishers and the value of their resources, and must be considered in new credit policies. Recommendations for fishers and formal institutions were drawn from informants in Paraty, literature related to fisheries credit and marketing, and insights from the researcher.

7.3.1 Making Credit Work for Small-scale Fishers

Even though government credit has largely failed to provide loans in an efficient and timely manner, through a system compatible with low-income households, current programs should not be removed from the fisheries sector but should rather be improved. The federal government requires a more uniform approach to credit delivery throughout Brazil, with an emphasis on lessons observed from flagship programs such as Crediamigo in the northeast of the country. Other examples of public credit providers such PROGER, which experiences many similar problems to PRONAF, confirm the flawed logic in non-partnered government credit schemes for uncreditworthy clients that lack efficiency and financial sustainability.

The Municipality of Paraty requires a credit provider that resembles Crediamigo's public bank and NGO partnership. A non-governmental organization partnered with a public bank would cover a multitude of issues related to product relevance, outreach, and loan repayment. In terms of product relevance and outreach, a partnership would facilitate the use of greater human resources on the ground in order to develop new techniques in lending, such as group loans, which have proven its success time and time again, and would open the program to many currently ineligible borrowers. Since the

greatest barrier in obtaining formal loans in Paraty is the guarantor, many fishers are in obvious need of an alternative guarantee and collateral system. The agent from PRONAF confirmed that when clients used relatives or individuals they knew well as a guarantor, they were much more likely to repay their loan on time. This implies a need for a reform towards the use of social capital as a means of guaranteeing loans, rather than guarantors, who are difficult for many fishers to obtain. Group lending would as well, help overcome the fear that many fishers have of losing their assets upon default, due to the non-use of physical collateral.

If PRONAF were to meet the demand of the lower income fishers, it would require a grassroots partnership due to its clear search for a broker to fill the duties that it lacks the ability to provide. Since the fishers' association processes all loan paperwork, and is now attempting to take on the defaulted loans through its proposed Endorsement Fund, PRONAF requires greater support to fulfill these roles. The lack of organization within the fishers' association jeopardizes its own ability to take on and deal with defaulted loans, and the transferring of defaulted loans to the fishers' association would result in a failure to deal with the root causes of defaulting and would perpetuate the current default trend experienced by the Bank of Brazil.

The clear lack of monitoring, follow-up and ability to recover defaulted loans despite the system of guarantors, demonstrates yet another argument for a government/non-government partnership at the bank level. Publicly operated credit providers often lack accountability for their performance and transfer loan risks and losses to the government, while non-governmental entities depend on efficiency, financial sustainability and increased credit outreach for their ultimate success. Market determined interest rates have been widely recommended in the literature with the argument that they facilitate greater outreach and higher levels of technical support through increased profits, greater levels of repayment through incentives which reduce the 'credit versus grant' confusion, and reduce unfair competition with other MFIs which remain crowded out by subsidized interest rates in the public sector. However, based on the microfinance crisis experienced in South Asia in 2010 (Governance Across Borders, October 19, 2010), competition may be the last thing that low-income households need. Despite a required rise in interest rates among public sector-based and microcredit programs in Brazil, the federal government must play a key role in limiting unhealthy and destructive

competition that has led to loan marketing, multiple lending and indebtedness in South Asia.

Community organization and social capital is a precious resource highly unexplored by fisher communities in Paraty. Credit delivered through a third party organization may increase social capital build-up through group lending, which may lead to alternate credit sources such as cooperatives, for which their conception and admission have been made simpler through recent amendments in government legislation. Credit cooperatives remain popular around the developing world due to the local initiatives that help create them, the social capital developed as a result of them, and the savings mechanisms endorsed by them. Fishers in Paraty require mechanisms that encourage savings, in order that they may reduce their dependency on loans.

7.3.2 Supporting Small-scale Fishers and Adding Value to their Products

The economy of Paraty is shifting rapidly from a natural resource dominated economy to a service based economy, brought by the rise of tourism. In order to address the economic vulnerability in the region, small-scale fishers require greater support in the form of credit. The most vulnerable fishers, due to their lack of livelihood flexibility, would not likely find an alternative occupation of greater income outside of fishing and therefore need support in order to raise their income to the point of generating savings. In terms of alleviating poverty in Brazil, exploring mechanisms to assist the most economically vulnerable fishers through capital investment would address the issue of poverty and to some degree fish production. The federal government is currently on a campaign to alleviate poverty across the country and raise fish production, however, in the event that new data on fishing yields were to prove current fishing intensity unsustainable, new entries would need to be controlled through limited licensing or more strict control on industrial fishing catches.

The small-scale fishers who are often the most economically vulnerable could play only a minor role in the sustainability of the fisheries along the southeast coast of Brazil due to their small contribution to total catches in comparison to industrial fleets. However, supporting small-scale fishers may not lead to significantly higher catches. Of great importance both for sustainability purposes and rising incomes is the assurance that fishers obtain a higher price for their fish in order to generate a wage that enables savings. An increasingly common activity in Paraty is fisheries tourism, a form of cultural tourism in which tourists pay to go fishing. Essentially the tourists cover the costs for fishing and

the fisher still sells their fish for the market price in the end. However, most economically vulnerable fishers do not contain the asset base to partake in this activity and would require capital build up.

Fishers earning a low income would be assisted through an enhanced capacity to sell their fish higher in the distribution chain, through gradual capital build-up in the area of fish storage and processing. This incentive would be the most tangible and feasible method of assisting fishers in increasing their income and savings capacity, while not driving them out of the sector. However, this process is much easier said than done, and would require an honest commitment on behalf of the state and federal government to provide loans for the most economically vulnerable fishers. Knowing that an overall raise in fish prices would create an influx of newcomers to the sector, conventional fish markets would continue to be the norm for the majority of fishers, especially for those who maintain mid-sized diesel capacity and larger.

Examples of grassroots initiatives from other regions in Brazil such as Betume, demonstrate the decreased vulnerability among fishers that are organized and assisted federally in terms of credit and marketing, while being kept in their sector of their choice. The fishers' association in Paraty is a highly unexploited resource that, provided political will, could play a fundamental role in such fisheries development initiatives. Nonetheless, fishers will also require a greater degree of involvement in addressing the challenges they face so that the occupation and culture that many of them love may overcome the current obstacles and remain viable for their children.

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Appendix A

Fisher Interview Schedule

The interview schedule was conducted in Paraty, Praia Grande, and Tarituba Brazil during the months of September, October and November 2010, and was approved for human ethics by the University of Manitoba Research Ethics Council

1. Name of Community_____
2. Household ID_____
3. For how many years have you fished?
4. What other sources make up the household income?
5. How did you finance your house?
6. Where do you hold a bank account?
7. How often do you take part in tourism activities with your fishing boat?
8. What type of fishing boat do you own?
9. How did you pay for your boat?
10. If your boat was financed, what was the interest rate charged?
11. Do you ever plan on purchasing a larger boat?
12. What other occupations have you considered outside of fishing?
13. How have fish catches changed during your career fishing?
14. What do you believe are the main causes driving changes in fish catches?
15. Where do you sell your fish?
16. What makes this location a good location to sell fish?
17. Do you have a fixed selling arrangement with your buyer?
18. How often do you take loans from fish market owners?
19. What interest rates does the fish market owner charge?
20. How often do you sell your fish independently?
21. State any challenges that come with selling fish to fish markets.
22. Who supplies your ice and diesel?
23. State any ways in which you have changed or plan on changing your fishing strategy in order to raise your income.
24. How often do you take loans to purchase fishing gear, supplies or boats?
25. From where do obtain loans?
26. How have you used PRONAF to finance fishing related investments?
27. State any issues with PRONAF that have led to a loan being rejected or your personal preference to refrain from utilizing this outlet.

Appendix B

Fish Buyer Interview Schedule

1. Name of fish market _____
2. Community of locale _____
3. From where do you purchase your fish?
4. With how many fishers do you currently maintain a fixed buying relationship?
5. Do you supply fishers with ice and diesel as credit in kind?
6. To what extent do you supply fishers with loans, either in cash, or in kind?
7. Describe any issues you have faced providing fishers with loans.
8. How have issues surrounding lending to fishers shaped your own lending practices?
9. How much money have you lost from loan defaulters in your career?

Appendix C

Formal Credit Institutions Interview Schedule

1. Name of institution _____
2. Municipality _____
3. Number of employees working in the program _____
4. To which sectors are microloans/ sector-based loans provided?
5. As of when was the program introduced to the fisheries sector in this region?
6. How were fishers made aware of the program in its opening?
7. What is the average size, and range of fisheries loans?
8. What do you believe that most fishers use their PRONAF loan for?
9. Explain the process in applying for a loan.
10. State the interest rates charged on loans per type and quantity.
11. What is your average rate of loan default in the fisheries sector?
12. How have loan defaults affected the current provision of loans and how might they effect the future state of the program in Paraty?
13. What do you believe is most responsible for loan defaults?
14. What solutions do you believe would be most influential in addressing the default issue?
15. How might the PRONAF program be improved to better cater to fisher needs?

Appendix D

Research Consent Form



UNIVERSITY
OF MANITOBA

Natural Resources Institute
Clayton H. Riddell Faculty of
Environment, Earth, and Resources

303 - 70A Dysart Road
Winnipeg, Manitoba
Canada R3T 2N2
NRI General Office 204 474-9373
Centre for CBRM 204 474-9050
Fax: 204 261 0038

Research Project Title: Small-scale Fisher Livelihood Strategies and the Role of Credit in Paraty, Brazil

Researcher: Dale J. Giesbrecht

Sponsor: Social Sciences and Humanities Research Council (SSHRC)

Research Timeline: All interviews (household, informal credit giver, formal credit giver) will be conducted within the months of September, October, and November 2010.

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Project Summary: My name is Dale Giesbrecht and I am a student at the University of Manitoba who is working in collaboration with the State University of Campinas (UNIPAMP), Sao Paulo, Brazil. I am conducting research in the region of Paraty in the Bahia Grande and you have been asked to participate in this study. I will read you a description the study to give you a basic idea about the research. Please feel free to ask any questions to the researcher at any time in order to clarify interview questions or unfamiliar words.

This project is the traditional ecological knowledge component of the research program: "Community-based resource management and food security in Coastal Brazil", funded by the IDRC through the IDRC Research Chair in Community-Based Resource Management at UNICAMP (PI, Prof. Alpina Begossi) and the Canada Research Chair in Community-Based Resource Management (PI, Prof. Fikret Berkes). The main objective of this research program is to develop integrated approaches to help fishers in Paraty (Rio de Janeiro State) to manage local resources and to diversify their income sources, and thus increase food security.

Individual Resource Project: The purpose of this research is to provide an assessment of the credit options in Paraty, Brazil, and how the use of credit impacts artisanal fisher livelihood strategies. In addition, an objective of the research is to document the process of fish marketing, livelihood enhancement and diversification and the daily realities of artisanal fisher households. The results of this research will be used to recommend policies regarding credit availability and access in the region of Paraty and will be used UNICAMP and the University of Manitoba, Canada to understand and provide advice regarding linkages between the environment, policy, and society in creating a sustainable and economically viable coastal fisheries sector in Paraty.

Risk and Benefits: No information will be used in a way that could put at risk the integrity or safety of participants. The researcher will pay specific attention to the dynamic between fishers and moneylenders, so as to minimize the possibility of tension between the two individuals regarding conflicting livelihood strategies. Moneylenders and fishers will be selected independently from one another unless oral consent is given by participants to suggest a possible candidate. In addition, consent may become difficult in terms of suspicion on behalf of the participants regarding the researcher’s motives. Therefore the option of oral consent by witness or tape recorder will be available.

Compensation: No financial compensation will be provided either directly or indirectly to participants for their contributions to this research project.

Please indicate whether or not you agree to the following:

Yes /No	1. I agree that the researcher may use a digital recording device during this interview/focus group.
Yes/No	2. I agree that the researcher may take notes during this interview/focus group.
Yes/No	3. I agree that the researcher may cite my name and directly quote me in future publications. I understand that as a result it will be possible for others to recognize me. (Please, feel free to answer this item at the end of the interview)
Yes/No	4. I agree that the researcher may directly quote me using pseudonym rather than my real name (Please feel free to answer this item at the end of the interview)
Yes/No	5. I agree that photographs of myself may be taken and used in reports and publications connected to this research.
Yes/ No	6. I wish to receive a summary of this interview/focus group.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Data Gathering and Storage: Interviews will be documented through note taking and the use of a digital recording device. All recordings, notes and transcripts will be stored in password protected computer files and any hard copies will be stored in a locked cabinet. No digital recording devices will be used or photographs taken during interviews without written consent from all participants involved in the interview session.

The information resulting from this interview/focus group will be kept confidential. If you wish to retain anonymity, pseudonym or ID number will be used to identify you on transcripts and any other reproductions of the information you provide. No one other than myself have access to the real names of interviewees who choose remained anonymous.

The findings from this research project will be made available to community members. A copy of the Masters thesis, a summary of findings in Portuguese, as well as

any other publications resulting from this research will be shared with the community-based organizations, as well as any participant requesting these materials.

In agreeing to participate in this study by giving your verbal consent, this indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researcher from his legal and professional responsibilities. You are free to withdraw from the study at any time without consequence.

If you have any concerns or complaints about this project you may contact the Human Ethics Secretariat at (204) 474-7122.

Statement of Consent

I _____ have read this consent form. I have had the opportunity to discuss the research study with the investigator. I have had my questions answered by him/her in a language I understand. The risks and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

By agreeing to this consent form, I am not waiving any of my legal rights as a participant in this study, nor releasing the investigators or the sponsor from their legal and professional responsibilities.

I, the undersigned, have witnessed the consent process for the participant named above and observed that all pages of the consent form were read to the participant and believe that the participant has understood and has knowingly given his consent.

Name of the witness: _____

Signature of the witness: _____

I, the undersigned have fully explained the relevant details of this research study to the participant and believe that the participant has understood and has knowingly given consent.

Printed Name: _____ Date: _____

Signature: _____

Translation required? Yes No If yes, indicate language _____

Appendix E

Human Ethics Approval Form



UNIVERSITY
OF MANITOBA

OFFICE OF RESEARCH
SERVICES

Office of the Vice-President (Research)

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APPROVAL CERTIFICATE

March 25, 2010

TO: Dale Giesbrecht
Principal Investigator

FROM: Wayne Taylor, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2010:043
An Assessment of Credit as a Strategic Tool for Livelihood
Enhancement and Diversification: The Case of Artisanal Fishers in
Paraty, Brazil

IDRC
(Advisor- T. Henley)

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- if you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to Eveline Saurette in the Office of Research Services, (e-mail eveline_saurette@umanitoba.ca, or fax 261-0325), including the Sponsor name, before your account can be opened.
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/ors/ethics/ors_ethics_human_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.

Bringing Research to Life