

A Closer Look at Rural Livelihoods:

Examining the livelihood assets, strategies and vulnerabilities of project participants in the Caribbean Natural Resources Institute's (CANARI) Rural Livelihoods Programme



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LIST OF ACRONYMS

CANARI – Caribbean Natural Resources Institute

BFMLA – Blanchisseuse Fisherfolk and Marine Life Association

BAPA – Blanchissesue Aquaculture and Producers Association

BEAT – Blanchisseuse Environmental Art Trust

AYDO – Aripo Youth Development Organisation

DFID – British Department for International Development

SLA – Sustainable Livelihoods Approach

IICA – Inter-American Institute for Cooperation on Agriculture

ADB – Agricultural Development Bank

PTSC – Public Transport Service Commission

URP – Unemployment Relief Programme

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1 Introduction

1.1 CANARI's Rural Livelihood Programme

Recognising that rural communities in the Caribbean are highly dependent on natural resources for subsistence use, informal enterprises, small businesses, and the provision of essential ecological goods and services, the Caribbean Natural Resources Institute (CANARI) established its Rural Livelihoods Programme. The Programme's purpose is to help rural communities start, maintain or strengthen sustainable natural-resource based livelihoods by building capacity, catalysing partnerships and influencing policy to create an enabling institutional environment.

One of the projects under the Programme, **"Improving livelihoods in rural communities in Trinidad and Tobago by developing small business ideas based on the sustainable use of natural resources"**, which is the focus of this study, seeks to improve livelihoods for individuals, community based organisations and/ or collectives in three rural communities in Trinidad (Blanchisseuse, Brasso Seco, Heights of Aripo) and one in Tobago (Speyside) by facilitating and supporting the start up of small businesses based on the sustainable use of natural resources. The project's objectives are to:

- Build the capacity of the project communities to engage in strategic visioning and planning and the identification of revenue-generating activities based on the sustainable use of natural resources.
- Catalyse and support the development of small and micro-enterprises, either run by individuals, community organisations, or collectives, in the project communities.
- Facilitate greater sharing of experiences and collaboration among the project communities and other communities and stakeholders within Trinidad and Tobago and the islands of the Caribbean about how they can more effectively develop livelihoods based on the sustainable use of natural resources.
- Empower the project communities to better network with technical and financial support agencies and to advocate for enhanced support of their efforts for livelihood development.

1.2 Purpose of the study

Many factors impact livelihood sustainability. Thus, when planning livelihood interventions it is important to have a clear understanding of what these factors are and how they either support or constrain livelihoods.

In its continued effort to develop effective interventions that will improve rural livelihoods, it is imperative that CANARI understands what strategies and resources rural households utilise in forming their livelihoods and what outcomes are achieved from these strategies. It is also important to understand the vulnerability context (shocks and stresses) in which rural households operate.

This study therefore aims to take a closer look at the factors that impact the livelihoods of some of the participants, from the three rural communities in Trinidad, involved in the aforementioned project under CANARI's Rural Livelihood Programme. The study will attempt to improve the understanding of rural livelihoods by determining:

- The livelihood assets utilised by the project participants in terms of their human, natural, social, physical and financial capital;
- The livelihood strategies utilised by project participants to achieve their livelihood goals and
- The vulnerability context in which each participant’s household operates.

It is expected that the findings from this research will help inform and subsequently improve rural livelihood intervention strategies being undertaken by CANARI.

1.3 A brief profile of the participants and their communities

The men and women surveyed for this study are members of various community groups participating in CANARI’s “Improving livelihoods in rural communities in Trinidad and Tobago by developing small business ideas based on the sustainable use of natural resources” project. The participants come from three rural communities in Trinidad: Brasso Seco, Heights of Aripo and Blanchisseuse. The community groups involved in the project are presented in Table 1.1, followed by a brief description of each community.

Table 1.1: List of community groups surveyed for the study

Community	Community Group
Blanchisseuse	Blanchisseuse Fisherfolk and Marine Life Association (BFMLA)
	Blanchisseuse Aquaculture and Producers Association (BAPA) – (This is an all women’s group)
	Blanchisseuse Environmental Art Trust (BEAT)
Heights of Aripo	Aripo Youth Development Organisation (AYDO)
Brasso Seco	Brasso Seco Farmer’s Group
	Brasso Seco Tourism Action Committee*

*Efforts to arrange a meeting with members from the Brasso Seco Action Committee before the drafting of this report were unsuccessful. As such they are not included in this study.

Heights of Aripo

Heights of Aripo is a small rural village located in the Northern Range of Trinidad at the foothills of the country’s highest mountain, El Cerro del Aripo. The village, which lies approximately ten kilometres from the Borough of Arima, has a long history of agriculture, including crops like cocoa (*Theobroma cacao*) and christophene (*Sechiun adule*) and is currently the second largest producer of watercress (*Nasturtium officinale*) in the country. Heights of Aripo is surrounded by a rich variety of natural resources including rivers, forests, caves and a wide diversity of flora and fauna.

Brasso Seco Village

Brasso Seco Village is, also located in the Northern Range of Trinidad with a population of approximately three-hundred and fifty persons. The rural village, a major cocoa producing region in Trinidad in the 1900's, makes use of abandoned cocoa estates to support a mix of agriculture including cocoa, coffee, bananas, vegetables and citrus (Cocoa Research Centre). Livelihoods in Brasso Seco are strongly tied to the natural resources present there, which include forests, rivers, waterfalls and abundant biodiversity. In addition to agriculture, community and eco-tourism are major natural-resource based livelihoods.

Blanchisseuse

Blanchisseuse is a coastal village located along the Northern Coast of Trinidad. The village is about twenty-four kilometres from the Borough of Arima with a population of roughly one thousand people. Blanchisseuse's varied coastal and land-based resources, including the ocean, rivers and surrounding forests support the community's two main natural resource-based livelihood activities - fishing and agriculture. The natural beauty of the community also makes it a popular long stay holiday spot for the more affluent in Trinidadian society; a trend which has seen the construction of many large vacation homes along portions of the village's picturesque coast.

2 The sustainable livelihoods approach

The design of the survey used for this study was guided by the British Department for International Development's (DFID) Sustainable Livelihoods Approach (SLA). The SLA was developed in an effort to combat poverty and uses a set of guiding principles to provide an analytical framework structure for building and understanding livelihoods.

The SL framework, illustrated in Figure 2.1, helps to organise various factors which constrain or enhance livelihood opportunities, and to show how they relate to each other (DFID, 1999). The SL framework encourages users to think about development in terms of livelihoods so as to enhance the livelihood assets and reduce the vulnerability of those whom development impacts.

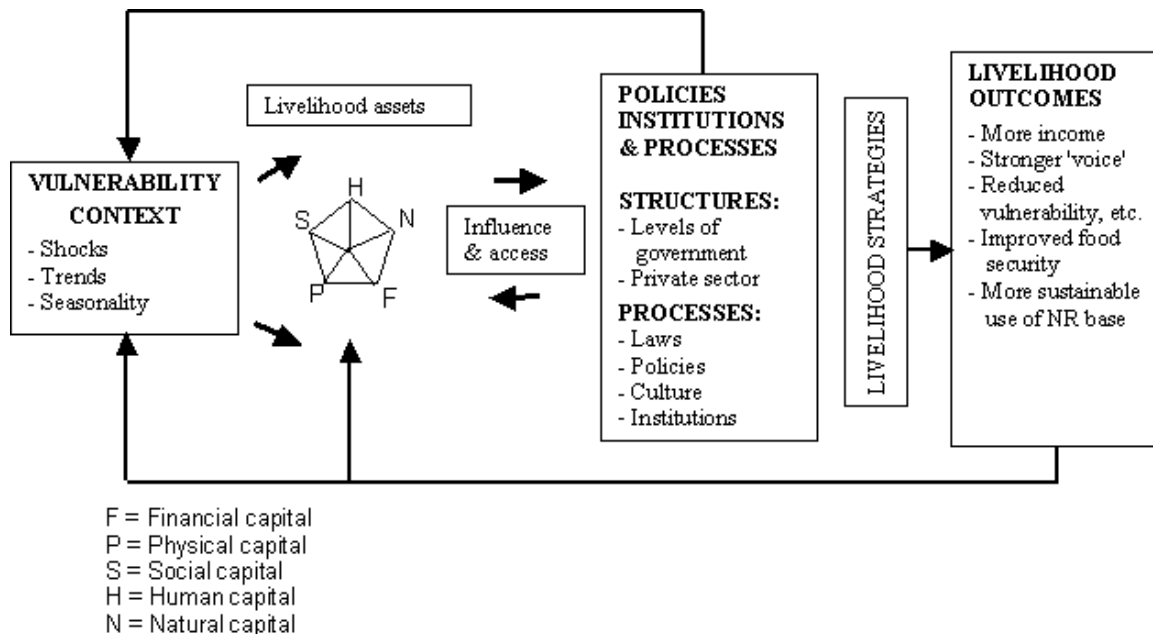


Figure 2.1 DFID Sustainable Livelihoods Approach Framework (Source: DFID)

Sustainability and people centeredness are two core tenets of the SL approach. The approach embraces economic, social, institutional and environmental elements, all of which are components of sustainability (DFID, 1999). According to DFID, livelihoods are sustainable when they:

- are resilient in the face of external shocks and stresses;
- are not dependent upon external support (or if they are, this support should itself be economically and institutionally sustainable);
- maintain the long-term productivity of natural resources; and
- do not undermine the livelihoods of, or compromise the livelihood options open to others (DFID, 1999).

The SLA has been applied in a range of circumstances in many countries, including project designs, project reviews, impact assessments, programme reviews and sector assessments. For example, in Kenya, the SLA was used to assess a butterfly farming project. The project's impacts were assessed in relation to all elements of the livelihood framework. This highlighted positive and negative effects of the project on farmers' assets which included higher incomes and increased access to external institutions such as the Kenyan Forestry Department for some farmers and high levels of risk and thus low participation by others (Farrington, 1999). The information gathered from these and other such analyses helps target the weak points in projects and contributes to their improvement by identifying the necessary interventions needed.

The SLA is a constant work in progress. With its continued practical application it continues to build from lessons learnt.

3 Method

Four to five persons from each of the groups listed in Table 1.1 were interviewed using a semi-structured questionnaire to assess their livelihood assets, strategies and vulnerability context. Interview dates were set up with each group before hand and the surveys were conducted one-on-one with group members who were willing to partake in the survey. Other than being a member of one of the groups working with CANARI no other criteria were used to select the survey respondents. In total, twenty-four (24) persons, four (4) from AYDO, five (5) from BAPA, five (5) from BFMLA, five (5) from BEAT and five (5) from the Brasso Seco Farmer's Group were interviewed. Dialogue beyond the context of the survey was encouraged during the interviews which resulted in informal discussions with individuals as well as with the groups. Each survey took between thirty to thirty-five minutes (30-35 minutes) to complete with each respondent representing one household.

The full application of the SLA was limited due to manpower constraints as only one person was undertaking the field surveys. As such, the policies, institutions and processes that may influence livelihood assets were not assessed.

4 Results

Twenty-four (24) persons from four different community groups were surveyed for this study (Appendix I). In terms of community representation, the four members from AYDO all reside in Heights of Aripo while only three of the five persons interviewed from the Brasso Seco Farmers' Group have their

primary residence in Brasso Seco. The other two members live in Morne La Croix, a community adjacent to Brasso Seco, and Arima, but have agricultural plots in Brasso Seco. Ten (10) of the fifteen (15) respondents from the Blanchisseuse' groups have their primary residence in Blanchisseuse, the other five (5), all members of BEAT, have their primary residences elsewhere but have strong ties to Blanchisseuse, either having lived there for a period of time or having family still living there.

The average age of the respondents is forty-four years old with the youngest respondent being twenty-six years old and the oldest sixty-five years old. Fourteen of the respondents were male and ten were female.

The results of the livelihood survey (livelihood assets, strategies and vulnerability context) are presented in the proceeding sections.

4.1 Livelihood Assets

4.1.1 Human capital

Human capital (Appendix 2) represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level human capital is a factor of the amount and quality of labour available; this varies according to household size, skill levels, leadership potential, health status, etc. (DFID, 1999).

The majority of respondents had a secondary education or higher. Only six of the respondents completed their schooling at the primary level and nine had gone on to either receive tertiary education or attend technical and trade institutes after secondary schooling. In terms of their skills, including fishing, farming, hairdressing and construction, many of the respondents indicated that family knowledge and self learning were key aspects of their training. This was especially true among the fishers in Blanchisseuse who all acquired their skills from family members who were fishers or from other fishers in the community. Cocoa farmers from Brasso Seco received training from organisations like the Cocoa and Coffee Industry Board of Trinidad and Tobago which helped improve their skills.

The average household size in this study was three (3) persons. Family structures varied, with some respondents living alone or with a spouse only, others in a nuclear family arrangement, some in single parent households, and others in extended families. On average, the majority of households had one or more additional person contributing to the household income. These persons included children of an employable age (generally over 20 years of age), spouses, siblings, uncles, aunts and parents. A substantial number of the contributions from older relatives over the age of sixty came from pension distributions. Though in most instances contributions were monetary, one of the farmers from Brasso Seco shared that his sixty-four year old mother contributed to his business by retailing his produce in the Arima market and his two nephews (who live outside of his household) helped with labour on his farm from time to time.

Good health is also an important factor that determines one's ability to pursue livelihood opportunities. All of the respondents indicated that they had no major or chronic health issues that impacted their ability to pursue their livelihood activities. Ill health was also not a serious issue for other members of the respondents' households within the last twelve months.

4.1.2 Social capital

Social capital (Appendix 3) refers to the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through:

- networks and connectedness, either vertical (patron/client) or horizontal (between individuals with shared interests) that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies;
- membership of more formalised groups which often entails adherence to mutually-agreed or commonly accepted rules, norms and sanctions; and
- relationships of trust, reciprocity and exchanges that facilitate co-operation, reduce transaction costs and may provide the basis for informal safety nets amongst the poor (DFID, 1999).

Each respondent was a member of at least one social group in their community. The benefits of group membership varied among respondents with some stating that they joined their respective groups simply to feel a part of something that was doing positive work for their community while others benefitted from the training and skills development opportunities that resulted from the groups working with civil society and government organisations. The opportunity to build their network of contacts was also noted as a key benefit for some. For example, one of the fishers from Blanchisseuse shared that because of the relationship that BFMLA built working with CANARI, they were able to use CANARI's contacts to secure a meeting with the government representative for their area to highlight the needs of the fishers in Blanchisseuse.

Membership in these social groups also facilitates access to wider institutions. Many of the groups to which the respondents belonged engaged with different civil society and government organisations to undertake projects, training and capacity building. Organisations such as the Inter-American Institute for Cooperation on Agriculture (IICA) and the Cocoa and Coffee Industry Board of Trinidad and Tobago, for example, worked with farmers in Brasso Seco to help develop skills related to planting cocoa. Veni Apwann, a non-profit company established to build capacity in civil society organisations in the Caribbean, also worked with the farmers in Brasso Seco to help build the capacity of their farmers' group.

Overall respondents stated that they did not depend on their social groups in times of need but one farmer from Brasso Seco felt that if the need arose the group would help her with clearing a plot of land for planting. A member from AYDO stated that the group would help raise funds for members with health problems and a respondent from BEAT said that the group was a source of emotional support for her when needed. In Blanchisseuse, the fishers in BFMLA helped each other bring in their boats after fishing trips; a task which requires several hands due to the poor condition of the ramp and jetty at the community's fishing facility.

A few respondents stated that there were conflicts in their groups. In BEAT it was noted that some members were not committed to the group and often left to form their own groups; this was observed, among the younger members.. There was also a perceived divide between the BEAT members that lived in Blanchisseuse and those that have left the community in search of better opportunities. A member from the Brasso Seco Farmers' Group shared that there was some conflict between the older farmers and the younger farmers because the younger farmers felt that the older farmers are not willing to share their knowledge with them. A member from BFMLA indicated that some of fishers in the group were dissatisfied with the progress that the group has made in getting assistance for repairing the

community's fishing facilities and as such feel that it was not worth being a part of the group. This has resulted in members not attending meetings and being inactive in the group. Lack of financially beneficial opportunities was one of the reasons cited by a member from BAPA for non-participation of some the members in that group.

One noteworthy observation was the lack of confidence that some respondents from the different communities had in their Village Councils. In most communities, the village/community council typically functions as a decision-making body, with an elected (by the community) executive that advocates for the needs and concerns of the community it represents. While village councils do not have any legal powers, they are often the first to be engaged by government or civil society organisations wishing to work with a particular community and in this sense they hold a significant amount of influence. Expressing his dissatisfaction, one of the respondents from Heights of Aripo said that he relinquished his membership in the Aripo Village Council because he felt that the council was only seeking the interests of a few people in the community. He also stated that the council wants to have total control in the community and as such does not share opportunities with the other community groups. A similar sentiment was shared by one of the respondents from Blanchisseuse who also felt that the Blanchisseuse Village Council showed favouritism to one family in particular. In Brasso Seco, one frustrated farmer also gave up his executive post in the Brasso Seco Village Council stating that "non-active members only want to keep their executive positions...the group is not working toward a shared vision."

4.1.3 Financial capital

Financial capital (Appendix 4) denotes the financial resources that people use to achieve their livelihood objectives.

The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent, that enables people to adopt different livelihood strategies (DFID, 199).

A little over sixty-percent (60%) of the respondents had two or more streams of earned income. Of those surveyed, just about twenty-nine (29%) received additional regular inflows of money either through, pension plans, child support, remittances from family living abroad or National Insurance (NIS) payments. Eighty-three percent (83%) of the respondents saved money either in banks or credit unions. One respondent from Heights of Aripo said that he also saved money in a *sou-sou*; a rotating savings arrangement where a group of people each contribute an equal amount of money for a pre-determined period of time and then each person gets a chance to all the money. While this form of saving is free from interest and traditional banking procedures, it is based on a high degree of trust and reciprocity.

Savings were either used as a long-term security measure, for example in case of emergencies, or as a short-term measure to purchase business related equipment or for special events. Those that did not save did not make enough cash income to save *and* cover their regular expenses. A fisher from Blanchisseuse, for example, said that he had no savings because all of his money goes into household expenses and repaying a loan from the Agricultural Development Bank (ADB) which he secured for the purchase of his boat and engine.

When asked what time of the year cash income was most important to their household, most respondents indicated that they had a need for it all year round. Households with children generally reported the school re-opening period (August) as the time when they had the greatest need for cash income to purchase books, uniforms and other school supplies. Others reported that festive periods such as Christmas and Easter were when they most had a need for cash income. About fifty-percent (50%) of the respondents reported that they had the cash income available during the periods when they needed it. These individuals reported saving especially for these times of the year. Those that did not always have cash available during their periods of need cited lack of gainful employment opportunities and seasonality of labour as key barriers.

In terms of household expenses, food and bills were reported as commanding the majority of the household income among respondents.

4.1.4 Physical capital

Physical capital (Appendix 5 and 5a) comprises the basic infrastructure and producer goods needed to support livelihoods. Producer goods are the tools and equipment that people use to function more productively.

Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. The following components of infrastructure are usually essential for sustainable livelihoods:

- affordable transport;
- secure shelter and buildings;
- adequate water supply and sanitation;
- clean, affordable energy; and
- access to information (communications).

Blanchisseuse

Fishing facilities

Inadequate physical capital is a major livelihood limitation for the fishers in Blanchisseuse. Each of the fishers interviewed lamented the condition of the ramp and jetty at the Blanchisseuse Fishing Facility. The ramp, shown in Figure 4.1, is the only access that allows fishers to haul their boats from the ocean onto the jetty at the fishing facility.



Figure 4.1: Defective ramp at the Blanchisseuse Fishing Facility.

The ramp, however, is broken in many sections making it difficult for fishers to simply push their boats along its surface. As a result, to move the boats from the sea to the jetty, several fishers have to physically lift the boats in a time consuming and strenuous process (See Figure 4.2). Moving the boats up the defective ramp damages the bottom of the boats. The fishers at Blanchisseuse have, therefore, equipped the bottom of their boats with metal strips for protection. Over short periods of time however, these strips become worn or damaged and must be replaced. This becomes quite costly. One fisher reported that strips had to be changed almost monthly at a cost of five-hundred dollars (\$500) per strip. Another reported that it costs about three-thousand dollars (\$3000) to have the strips removed and installed and this had to be done about three times per year. The President of the BFMLA noted that the Blanchisseuse Fishing Facility is the only facility in Trinidad where the fishers still have to pull their boats in by hand and use steel strips. The increased cost of boat maintenance and the days lost in undertaking repairs result in lost wages for the fishers in Blanchisseuse.



Figure 4.2: Seven fishers hauling in one boat because of the defective ramp.

The jetty is another issue for the fishers. Shown in Figure 4.3, the jetty, on which the fishers secure their boats, at the Blanchisseuse Fishing Facility is in a serious state of disrepair. Over time, the primarily wooden structure has weakened and is missing several planks, leaving many gaping holes on its surface. The fishers interviewed reported several instances where, while moving their vessels from the ramp to the jetty, men have fallen through these holes resulting in serious injuries. Sea access to the jetty is also limited because the ramp on the western end has been completely blocked by a landslide.

Overcrowding on the jetty compounds the issue of access, as fishers have to manoeuvre their vessels from among the fifty boats on the jetty to get to the single available ramp on the eastern end.



Figure 4.3: Missing planks on the surface of the jetty at the Blanchisseuse Fishing Facility.

Transport

In terms of land based transport, sixty-percent (60%) of the respondents reported that they did not own personal vehicles and instead used public transport. Public transport was generally regarded as affordable costing between \$16-\$40 dollars round trip between Blanchisseuse and Port of Spain. The community is served by a Public Transport Service Commission (PTSC) bus service and private taxis that about fifty-percent (50%) of the respondents found to be reliable. The other fifty-percent (50%) reported that due to bad road conditions in Blanchisseuse private taxis sometimes charged travellers more money than normal and would often be unwilling to travel the full route so as not to cause damage to their vehicles.

Housing and health facilities

The vast majority of respondents from Blanchisseuse lived in secure concrete housing structures with good water and electricity supplies. Only two respondents reported that they did not have pipe-borne water in their homes, and instead harvested and stored rain-water as their main water supply. Each respondent also had access to at least two types of information communications technology in their home including televisions, radios, computers, telephones, cell phones and/or internet connections.

With respect to health facilities, the Blanchisseuse community is served by the government operated Blanchisseuse/Brasso Seco Health Centre located along the Blanchisseuse Main Road in Blanchisseuse. Access to the health centre was generally rated as good but the quality of service was seen as poor. The main concerns about the service at health centre were that it is understaffed, served by only one resident nurse; the range of services are limited, for example no dental services are available; and no health care services are available after hours, meaning that any after-hour emergencies have to go to the Port of Spain General hospital almost forty-three kilometres (43 km) away. One man shared that he was once bitten by a snake after the health centre had already closed for the day and had to wait until the next morning to get to the hospital to be treated because transport was not available at the time.

Brasso Seco

Transport

Two-fifths of the respondents from Brasso Seco used public transport as their primary means of transport. The other respondents had their own personal vehicles. Those who used public transport found it to be unreliable and unaffordable costing between \$16- \$50 per round trip from Brasso Seco to the nearest town Arima. Brasso Seco is also served by a PTSC bus service originating in Arima. According to respondents however, the service is very unreliable and often times they have to rely on private taxis, which could cost as much as one-hundred dollars (\$100) to go one-way from Arima to Brasso Seco. The high cost of transport in this area is due to the long distance and poor condition of the Paria Main Road leading to Brasso Seco.

Housing and health facilities

Housing structures among the respondents from Brasso Seco were generally made of concrete with good pipe-borne water and electricity supplies. Each home had access to two or more information communication technology devices including televisions, radios, computers, cell phones and landline telephones. None of the respondents from Brasso Seco had internet connections, due in part to the poor internet access in the area.

Residents in Brasso Seco also use the Blanchisseuse/Brasso Seco Health Centre located on the Blanchisseuse Main Road. Similar to the respondents in Blanchisseuse, the respondents from Brasso Seco regarded access to the health centre as good but quality of service provided as poor. One respondent complained that the centre was only visited by a doctor once per week.

Heights of Aripo

Transport

The majority of respondents from Heights of Aripo do not own personal vehicles and as such depend on public transport as their primary mode of transport. Public transport in Heights of Aripo is considered to be very unreliable and costly. In March 2014, the village was provided with its first ever PTSC bus service by the government to help ease transportation challenges in the community. Unfortunately, according to respondents, the bus service, which was intended to be a long term measure, only lasted for about two weeks and at the time interviews for this study were undertaken it had not resumed. Villagers were not informed as to why the service was halted, but suspect that political decisions and the poor condition of the road leading to the village may have been contributing factors. While the bus service was operational, transport between the village and Sangre Grande, a nearby town, cost about three dollars (\$3). As a comparison, private taxis (which are usually difficult to find) working the same route, charge about twenty dollars (\$20) per person per round trip.

Housing and health facilities

The homes of all of the respondents in Heights of Aripo were concrete structures with a good electricity supply. While three of the four households interviewed had pipe-borne water one single mother of three stated that she had to use a community stand-pipe to get water for her household. The President

of AYDO shared that this is a common occurrence among residents in Heights of Aripo as only half of the community received a regular pipe-borne water supply. Those without pipe-borne water had to depend on other community members, the river or community stand-pipes. The households surveyed had access to information communication technology including televisions, radios, computers or cell phones. None of the respondents had land line telephones or internet access.

The nearest health centres serving the Heights of Aripo community are located in Arima and Sangre Grande. With transportation being a challenge for the community, accessing these health centres, especially during times of emergency, is difficult.

4.1.5 Natural capital

Natural capital (Appendix 6) is the term used for the natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived. There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production (trees, land, etc.) (DFID, 1999).

Survey respondents identified a variety of uses for the natural resources in their respective communities. Some of these uses, listed in Table 4.1 below, were income generating and some were related to everyday household use and recreation.

Table 4.1: Uses of natural resources in Brasso Seco, Blanchisseuse and Heights of Aripo

Resource	Blanchisseuse	Brasso Seco	Heights of Aripo
Beaches	<ul style="list-style-type: none"> • Boat repairs • Seamoss harvesting • Sport • Relaxation • Artistic photos for sale 		
Rivers	<ul style="list-style-type: none"> • Recreation • Source of drinking water • Irrigation of crops • Diving for river lobsters (food and sale) 	<ul style="list-style-type: none"> • Irrigation of crops • Bathing • Source of drinking water 	<ul style="list-style-type: none"> • Catch crabs for food • Bathing and washing (everyday use) •
Forests	<ul style="list-style-type: none"> • Hunting • Hiking • Small scale agriculture • Bee keeping 	<ul style="list-style-type: none"> • Hunting • Relaxation (exercise) 	<ul style="list-style-type: none"> • Hiking • Tour guiding (caves)
Sea	<ul style="list-style-type: none"> • Fishing (food and sale) 		
Land	<ul style="list-style-type: none"> • Farming (agriculture) • Home gardens 	<ul style="list-style-type: none"> • Farming 	<ul style="list-style-type: none"> • Farming • Home gardens

Access to natural resources

The main concerns with access came from the farmers in Brasso Seco who indicated that the access roads leading to their agricultural plots were in very poor condition. One farmer shared that, due to the condition of the access road, it took him almost sixty-minutes (60 minutes) to drive to his land. He estimated that if the road was rehabilitated it would only take about ten minutes. The extra travelling time (almost 2 hours daily) is time lost that could have been spent tending to his crops. Similar issues were identified in Blanchisseuse among the women of BAPA. The women recently started planting herbs in the forests for production of green seasoning for sale, and highlighted the difficulty they experienced accessing their planting plot because of the poor condition of the road. The group does not have a vehicle to get to their planting site and therefore have to walk a quarter of a mile each way, with equipment and supplies, to tend to their plants.

Public/ community beach access is also a concern in Blanchisseuse due to increased coastal development. Certain sections of the coastline in the Blanchisseuse community are completely blocked off because of the construction of vacation homes by affluent outsiders. One respondent shared that community members were now being charged a fee to use certain beaches in the area.

Changes in quality of natural resources

Respondents were asked to identify any observed changes (good or bad) and possible causes for these changes in the natural resources which they use. Their responses are presented in Table 4.2 below.

Table 4.2: Observed changes in quality of natural resources in Blanchisseuse, Brasso Seco and Heights of Aripo

Community	Observed changes in quality of resource	Possible cause of changes
Blanchisseuse	<ul style="list-style-type: none"> • Coastal/beach erosion • More pollution • Lower yields of seamoss • Lower volume of water in rivers • Decreased water quality in rivers (more algae) • Dramatic decrease in fish catch 	<ul style="list-style-type: none"> • Sand quarrying and increased coastal construction causing coastal erosion • Unsustainable harvesting of seamoss (some community members only driven by short-term profits) • Effluent from nearby hotel running into the Marianne River affecting water quality • Seismic surveys by oil companies affecting fish catch • More fishers resulting in overfishing • Climate change causing lower volume of water in rivers
Brasso Seco	<ul style="list-style-type: none"> • Forests are being destroyed/dying out • Lower water levels in rivers and waterfalls 	<ul style="list-style-type: none"> • Poor farming practices (excessive clearing of trees in watershed) • People dumping rubbish in

	<ul style="list-style-type: none"> Increased pollution in rivers 	<ul style="list-style-type: none"> rivers Climate Change causing lower volume of water in rivers and waterfalls
Heights of Aripo	<ul style="list-style-type: none"> Lower volume of water in rivers More garbage in rivers 	<ul style="list-style-type: none"> Farming in forests affecting the quality of the river Clearing of watercress causes sediment to run into the river

Conflicts over use of resources

Very few natural-resource based conflicts were identified in the communities. Those identified included:

- Conflict between community members in Blanchisseuse and outsiders. As previously mentioned, outsiders have been purchasing coastal lands in Blanchisseuse and constructing beach-front properties, consequently blocking community access to certain beaches in the area.
- Conflict among seamoss harvesters in Blanchisseuse. BEAT has been working with the Institute of Marine Affairs to learn sustainable techniques for harvesting the seamoss that grows naturally along the coast in Blanchisseuse. Through this work the group has learnt that cutting the seamoss, instead of uprooting it, is the best way for it to be harvested. This is because, cutting the fleshy parts, that are dried and used to make other products, preserves the root base and allows the seamoss to continue growing. Uprooting on the other hand damages the plant and slows the re-growth process. Some seamoss harvesters, presumably unaware of the impact of their actions and driven by short-term gains, continue to uproot the plants.
- Conflict between fishers in Blanchisseuse and oil companies. Oil companies use marine seismic surveys as part of the exploration process for oil and gas. Fishers in Blanchisseuse believe that the techniques involved in this process are affecting fish stocks in their traditional fishing grounds. One major concern by the fishers is the lack of communication from the oil companies.

4.2 Vulnerability context

The *Vulnerability Context* frames the external environment in which people exist. People’s livelihoods and the wider availability of assets are fundamentally affected by critical trends as well as by shocks and seasonality – over which they have limited or no control (DFID, 1999).

Shocks and stresses

The pie chart in Figure 4.4 shows some of the shocks and stresses which respondents stated they had been exposed to in the last twelve (12) months. Overall, respondents indicated that their households had been most affected by rising food prices, climate change, decreased fish stocks and political decisions.

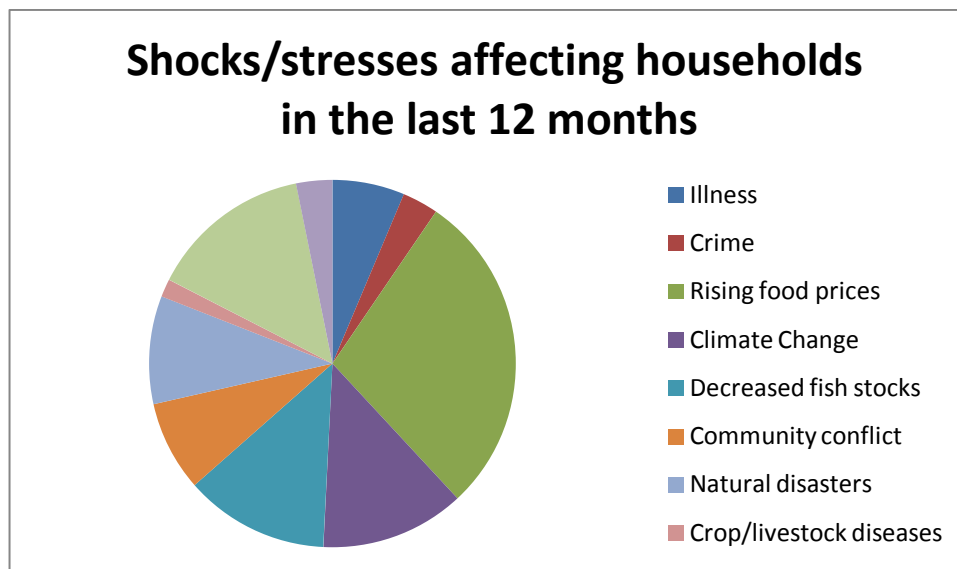


Figure 4.4: Pie chart showing the various shocks and stresses affecting households in the study areas in the last 12 months

Rising food prices was cited by seventy-five percent (75%) of those surveyed as the biggest stress on their households in the last twelve months. National food prices continue to rise in response to global fluctuations in the availability of key crops. At the rural community level, food goods available at community shops have seen additional mark-ups due to the higher cost of transport into rural areas.

Climate change was also identified as having a major impact on households. Respondents mostly associated climate change with hotter days, which they felt affected their quality of life, and declining fish stocks. Decreased fish stocks had a major impact on households that either depended on the sale of seafood as a main source of income or consumed seafood as a main source of dietary animal protein.

In each community, political decisions (or rather political inaction) were also seen as having a major impact on livelihoods. For example, farmers in Brasso Seco were affected by the lack of political attention given to the poor condition of agricultural access roads in their community. Similarly, fishers in Blanchisseuse have made several unsuccessful attempts to get help from their political representative and the Fisheries Division to address the condition of the fishing facilities in that area (See section on Physical Capital). In Heights of Aripo, community members have been negatively impacted by the sudden termination of a much needed community bus service started by the government earlier in the year.

Stresses, such as illness, community conflict and crop and livestock diseases were least identified as having impacted households in the study communities. While crime was also one of the least identified stresses among respondents, two respondents from Blanchisseuse mentioned that drug dealing and theft was on the rise in their community. This, they felt, was attributed to the high school drop-out rate among youth in the area. The recent oil spill, in December 2013, on the south-western coast of the island was the only other stress identified by respondents. This mainly had an impact on the livelihoods of fishers in Blanchisseuse who stated that since the spill people were unwilling to purchase their fish,

fearing that it was contaminated. The oil spill was also blamed for killing the bait which the fishers use for a la vive fishing.

Seasonality

Overall, respondents indicated that their livelihoods and households were most vulnerable during the rainy season (June to December) as opposed to the dry season (January to May). The high incidence of landslides was the most cited cause of livelihood vulnerability affecting all the study communities during the rainy season. Landslides along main access routes blocked passage of vehicles in and out the communities surveyed. For those employed outside of the community this has resulted in days of lost wages. In Brasso Seco, landslides also topple electricity lines in the community leaving residents without electricity for long periods. Landslides also affect the farmers in Brasso Seco as they often destroy crops. The destruction of crops caused by landslides in the rainy season was cited as the reason for lower household incomes by those who depended on money from the sale of agricultural goods.

In the dry season issues with water seemed to be the biggest problem for most respondents. Each community reported that water levels were lower during the dry season. However, unlike in wetter months, most respondents had coping strategies to deal with the reduction of water supply in the dry season, including saving water in tanks, conserving water, making use of natural sources of water such as springs and rivers, installing drip systems to irrigate crops and converting to organic farming (this type of farming uses less water).

4.3 Livelihood strategies

The livelihoods approach seeks to promote choice, opportunity and diversity. This is nowhere more apparent than in its treatment of livelihood strategies – the overarching term used to denote the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals (DFID, 1999).

The livelihood strategies of the residents in the study communities seem to focus on livelihood diversification and multiple income earners per household.

The most prevalent livelihood strategy employed by the residents of each community is having multiple income earners in one household. With few exceptions, the surveys revealed that in households where individuals were of a workable age almost all of these individuals were employed and contributing to the household income. Undoubtedly, this would create a situation where bills and other money drawing activities would be shared among the residents of a single household.

Livelihood diversification was used to reduce livelihood vulnerability and achieve favourable livelihood outcomes among survey respondents. Many of the respondents had more than one stream of earned income. This was especially true among the men surveyed. For example one fisher from Blanchisseuse had four other streams of income as an electrician, tiler, hunter and landscaper. Livelihood diversification was also discovered to be seasonal in some cases. That is, individuals would earn money according to what jobs were favourable during particular seasons. For example farming in the wetter months and doing construction in the dry season when more of this type of work is available.

5 Discussion

The findings presented here demonstrate that multiple factors affect the sustainability of rural livelihoods in Brasso Seco, Blanchisseuse and Heights of Aripo. The degree of access to various capital assets (physical, natural, financial, social and human) by rural households either enhances or constrains their ability to achieve their livelihood outcomes. Access to these assets are different for each community (and in some cases different groups in a community) and certainly for each household. Effective livelihood interventions must therefore take a context-specific approach when addressing the issue of sustainable rural livelihoods. Coming out of this particular study the following issues are highlighted as key areas for livelihood intervention projects.

Gender and job availability

The women from Blanchisseuse surveyed for this study had one main complaint and that is that women in Blanchisseuse have a difficult time finding gainful employment. In spite of their qualifications, (including diplomas in construction design and mechanical engineering) the women felt like their only options for jobs in their community was as low wage earning food preparers in the community's Food and Nutrition Programme or labourers in the Unemployment Relief Programme (URP). Leaving their community to find jobs was considered difficult for most of the women who had strong social ties to Blanchisseuse. Travelling out of the community for jobs was also difficult due to the unreliability of transport in and out of the community.

The women of BAPA (Figure 5.1) with help from CANARI have recently come together to create employment opportunities for women in Blanchisseuse by starting a small business based on the production and sale of herbs to use as seasoning. How effective this will be as a sustainable income generating activity for the women of the group is yet to be seen. This is certainly, however, an entry point for other organisations engaged in rural women's development.



Figure 5.1: Some of the women from the Blanchisseuse Aquaculture and Producers Association (BAPA)

Livelihood diversification as an effective livelihood strategy

Livelihood diversification was a common strategy observed among survey respondents; notably among the men. Livelihood diversification is defined as ‘the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living’ (Ellis, 1998). While livelihood diversification is generally regarded as an effective livelihood strategy, studies have found that it has both positive *and* negative effects. On the positive end, livelihood diversification contributes to the sustainability of rural livelihoods because it improves long-term resilience in the face of adverse trends or sudden shocks (Overseas Development Institute, 1999). On the negative end, it may have adverse gender effects, for example where it is male labour that is mostly able to take advantage of diversification opportunities (Overseas Development Institute, 1999). Exploring these potential positive and negative impacts through research is important in determining if livelihood diversification opportunities should be expanded and supported through policy as an effective livelihood strategy for the communities studied.

Physical capital limiting livelihoods

Lack of appropriate physical capital (mostly community assets) appeared to be the most significant barrier to sustainable livelihoods in the communities studied. Poor transport infrastructure, including community and agricultural access roads, and inadequate community facilities such as health centres and fishing facilities were among the main issues identified by respondents. Inadequate physical capital in some instances was shown to preclude income generation.

Addressing issues of physical capital in these communities requires government intervention and considerable financial investment. Government assistance may be more forthcoming if the national economic value (tourism, fishing and agriculture) of these rural communities can be successfully demonstrated to key decision makers. Advocating for better rural development and stronger rural development policies will also be necessary. These are key entry points for civil society involvement.

The impact of climate change on rural livelihoods

Given the high dependence of rural livelihoods on natural resources it is critical that measures be taken to ensure rural livelihood sustainability in the face environmental challenges such as climate change. Climate adaptation among fishers in Blanchisseuse and farmers in Brasso Seco is especially crucial as these livelihoods will be directly affected by climate-driven impacts such as lower fish stocks and increased plant pests and diseases. Reduced water availability during the dry season was highlighted as a major issue in each community. While many respondents could not account for this change others felt that climate change was to blame. Increasing awareness on climate change and building the capacity of rural communities to adapt to climate change will therefore be necessary.

More in-depth understanding of rural livelihoods

This study only provides a snap-shot of rural livelihoods in Brasso Seco, Blanchisseuse and Heights of Aripo. There is certainly a need for a more involved study that would capture the full scope of the SLA.

Understanding the impact of current policies, institutions and processes on rural livelihoods is a key step in policy and institutional reform.

6 Conclusion

Rural households in Brasso Seco, Blanchisseuse and Heights of Aripo are impacted by a number of factors which affect their livelihoods. Of these, lack of adequate physical capital seems to be the most pressing matter. With the proper investment by government and civil society support each community has the potential to have thriving tourism, agriculture and fishing (Blanchisseuse) industries.

7 References

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8 APPENDICES

APPENDIX 1 – GENERAL INFORMATION ABOUT RESPONDENTS

ID	Gender	Age	Marital Status	Number of People in HH	Group
2A	F	62	Married	3	BEAT
3A	M	65	Single	1	BEAT
4A	M	61	Divorced	1	BEAT
5A	M	63	Married	2	BEAT
6A	F	52	Married	2	BEAT
7A	F	35	Common-law	4	BSFG
8A	M	59	Married	2	BSFG
9A	M	55	Married	4	BSFG
10A	M	39	Divorced	2	BSFG
11A	M	55	Divorced	1	BSFG
12A	F	29	Common-law	4	BAPA
13A	F	24	Common-law	6	BAPA
14A	F	30	Married	3	BAPA
15A	F	40	Common-law	4	BAPA
16A	F	29	Single	6	BAPA
17A	M	26	Single	4	BFMLA
18A	M	51	Married	1	BFMLA
19A	M	60	Common-law	6	BFMLA
20A	M	41	Married	3	BFMLA
21A	M	29	Single	2	BFMLA
22A	M	33	Single	4	AYDO

ID	Gender	Age	Marital Status	Number of People in HH	Group
23A	F	42	Single	4	AYDO
24A	M	39	Common-law	2	AYDO
25A	F	31	Separated	4	AYDO

APPENDIX 2 – HUMAN CAPITAL

ID	Level of Education	Primary Livelihood	Skills Acquired	Major/Chronic illness	Other members contribute to HH income
2A	Tertiary	Bed and Breakfast	TDC- hospitality training	No	Yes
3A	Secondary	Landlord	Self-taught	No	NA
4A	Tertiary	Pensioner	NA	No	NA
5A	Primary	Pensioner	NA	No	Yes
6A	Secondary	Pay-roll clerk	On the job training	No	Yes
7A	Technical Institute	Farmer	Ministry of Agriculture, Coffee and Cocoa Board	No	Yes
8A	Primary	Farmer	Family knowledge	No	Yes
9A	Primary	Survey Officer	On the job training	No	Yes
10A	Secondary	Farmer	Self-taught, Training from Coffee and Cocoa Board	No	Yes
11A	Secondary	Construction worker	Family knowledge and construction courses	No	NA
12A	Secondary	Caregiver	Self-taught	No	Yes
13A	Technical Institute	Cleaner	Home	No	Yes
14A	Tertiary	Teacher	University	No	Yes
15A	Technical Institute	Teacher	SERVOL	No	Yes
16A	Technical Institute	Hairdresser	Self-taught, cosmetology courses	No	Yes
17A	Tertiary	Electrician, fisher	John D., Family knowledge	No	Yes
18A	Secondary	Pensioner	NA	No	NA
19A	Secondary	Fisher	Learnt from other fishers	No	Yes
20A	Primary	Fisher	Family knowledge, other fishers	No	No
21A	Tertiary	Fisher	Family knowledge (father), in the field	No	Yes

ID	Level of Education	Primary Livelihood	Skills Acquired	Major/Chronic illness	Other members contribute to HH income
22A	Secondary	Car rental	Self taught, friends	No	Yes
23A	Secondary	Labourer with Forestry Department	On the job training	No	No
24A	Primary	Mason	On the job training	No	No
25A	Primary	Labourer with Forestry Department	On the job training	No	No

APPENDIX 3 – SOCIAL CAPITAL

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
2A	Yes. Blanchisseuse Environmental Art Trust (BEAT), Renaissance Committee of St. Jude, BELIX Foundation of Arima	Yes. Social, emotional, being able to give back	CANARI, UNDP	Yes, for emotional support	Yes, personality conflicts
3A	Yes. BEAT	Yes. Exposure for art work	CANARI, UNDP	Haven't had a need to	Yes, members leave BEAT to form their own groups as some members are not committed to the group
4A	Yes. BEAT	Yes. Satisfaction of empowering others	CANARI, UNDP, IICA, IMA, UWI	Haven't had a need to	Yes, younger members of BEAT get pulled to other groups
5A	Yes. BEAT	Yes. Develop skills get exposure, keep active and stimulated	CANARI, UNDP	Haven't had a need to	Yes, there is a divide among members of BEAT still living in Blanchisseuse and those who have moved out

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
6A	Yes. Blanchisseuse Community Council, BEAT, Glory Boys United Sports Club, Blanchisseuse Early Childhood Centre.	No. Not looking for benefits	CANARI, SERVOL	Yes	No
7A	Yes. Brasso Seco Farmers' Group.	Yes, skills and training from organisations that work with the group	Ministry of Community Development, CANARI, IICA, Veni Apwaan	Doesn't approach in time of need. But believes that they would assist with activities like clearing of land for planting.	Yes. Older farmers in the BFA don't want to share information and knowledge with the younger farmers.
8A	Yes. Brasso Seco Farmers' Group, Brasso Seco Village Council.	Yes. Personal satisfaction from helping the community	CANARI, IICA	Haven't had a need to	No
9A	Yes. Brasso Seco Farmers' Group, Brasso Seco Village Council, Tourism Action Committee (TAC), Pentecostal Church Group	Yes. Training and personal satisfaction from seeing the improvement of the community	CANARI, IICA	Haven't had a need to	No

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
10 A	Yes. Brasso Seco Farmers' Group, Brasso Seco Village Council, Tourism Action Committee.	Yes. Networking with other organisations and socialising.	CANARI, IICA, Veni Apwaan	No	Yes. Non-active members wanting to keep executive posts. Some Village Council members unable to work towards the group's vision
11 A	Yes. Brasso Seco Farmers' Group, Agricultural Society of Trinidad and Tobago	Yes. Network with other organisations. Training from other organisations.	CANARI, IICA, ASA Wright	Haven't had a need to	No
12 A	Yes. Blanchisseuse Aquaculture and Producers Association (BAPA).	Yes. Learning new skills in agriculture	CANARI	Haven't had a need to	No
13 A	Yes. BAPA. Blanchisseuse Rural Women's Group	Yes. Blanchisseuse Rural Women's Group offers courses in different activities	CANARI, Rural Women's Association	Haven't had a need to	No
14 A	Yes. BAPA, BEAT.	Yes. Satisfaction of helping women in	CANARI	Haven't had a need to	No

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
		the community			
15 A	Yes. BAPA.	Yes. Opportunities to improve my livelihood. Learn new skills in aquaculture and agriculture. Self improvement.	CANARI	Haven't had a need to	No. (BAPA) There is favouritism in the Village Council. It only helps one family and is not fair across the board.
16 A	Yes. BAPA, Blanchisseuse Fisherfolk and Marine Life Association, BEAT	Yes. Personal satisfaction from helping the community	CANARI, Fisheries Division, IICA, UNDP	Haven't had a need to	Yes. Some persons don't want to be a part of the groups if they are not benefitting financially. There is no trust and accountability.
17 A	Yes. Blanchisseuse Fisherfolk and Marine Life Association, Turtle Village Trust, Blanchisseuse Village Council	Yes. The group helps to improve facilities for me and other fishers.	CANARI	Small loans from groups. Help with beach clean-ups	Yes. No order in the Village Council since the passing of the council's president. Things are now haywire.

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
18 A	Yes. Blanchisseuse Fisherfolk and Marine Life Association, North Coast Empowerment Group, Blanchisseuse Community Council.	Yes. Sense of comfort and purpose in giving back to the community.	CANARI	Haven't had a need to	Yes. Some members feel as if the Fisher's Organisation is not worth being a part of because they are not seeing any changes to the condition of the facilities
19 A	Yes. Blanchisseuse Fisherfolk and Marine Life Association.	Yes. Networking and socialising. Sharing of experiences and skills.	CANARI	Haven't had a need to	No.
20 A	Yes. Blanchisseuse Fisherfolk and Marine Life Association.	Yes. Personal satisfaction with helping community.	CANARI	Haven't had a need to	No
21 A	Yes. Blanchisseuse Fisherfolk and Marine Life Association.	Yes. Helping the fishing community and helping to improve facilities.	CANARI	Haven't had a need to but fishers and community members help with pulling in boats.	No

ID	Member of a social group	Do you benefit from membership ?	Do groups work with civil society or government?	Rely on in times of need	Any group conflicts
22 A	Yes. Aripo Youth Development Organisation (AYDO).	Yes. Knowledge, exposure, networking.	CANARI, TDC (tour guide training), IICA (proposal writing, training in agro-tourism)	Yes. Help raise funds for members with health issues.	No, not with AYDO. The Village Council wants to be in charge of everything and not giving opportunities to the other groups in the community. (former village council member)
23 A	Yes. AYDO. Aripo Farmers' Group.	No. There is a lack of communication in the Aripo Farmers' Group.	Ministry of Food Production, CANARI	Lack of communication within Aripo Farmers' Association	No
24 A	Yes. AYDO, Aripo Village Council, Political Party Group.	Yes. Networking, meeting new people.	CANARI	Haven't had a need to	No
25 A	Yes. AYDO. Aripo Farmers' Association.	Yes. Help educate children to be active and educated about their community and environment	CANARI	Haven't had a need to	No

APPENDIX 4 – FINANCIAL CAPITAL

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
2A	Bed & Breakfast, Selling art	Self Employed	Pension	Yes	Bank deposits, Credit Union	All Year	No. Many expenses. Daughter in university	Bills, food
3A	Landlord, construction, painting (seasonal)	Self Employed	None	No. Don't make enough to save	NA	All Year	Not always. Depends on job availability.	Food
4A	None	N/A	Pension	Yes. For security	Bank deposits, Credit Union	All Year	Yes. I use money sustainably.	Bills, Food
5A	Gardening, Parlour	Self Employed	Pension	Yes. Sometimes when I am able I save. I save for events or major purchases	Bank deposits	New Year's Day	Yes. I use money sustainably.	Food, Bills
6A	Pay-roll clerk	Employed, Ministry of Works	None	Yes	Bank deposits	No particular time	NA	Savings

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
7A	Farmer, Vegetable stall, Make and sell roast pepper	Self Employed	Child support	Yes. Save for emergency	Agricultural development bank	Return to school (August)	No. No planting in dry season reduces household income during this time	Food
8A	Foreman, farmer	Employed Tunapuna/ Piarco Regional Corp., Self Employed	None	Yes.	Bank deposits.	All Year	Yes.	Bills
9A	Surveying Officer, farmer	Employed, San Jaun Laventille Regional Corp. Self-employed	None	Yes. Limited	Bank deposits.	All Year	No. Money mostly directed to bills and food.	Food, Bills
10 A	Farmer	Self employed	None	Yes. To purchase equipment and for maintenance of equipment and vehicle. Unable to save for emergencies	Bank deposits	All Year	No. Inability to produce desired crop volume.	Back into business(equipment, maintenance) home construction

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
				, not making enough.				
11 A	Construction, Farming, Construction consultant	Self Employed	None	Yes	Bank deposits, credit union	All Year	Yes. Most times except when weather conditions might decrease crop availability.	Upgrade business and travel for leisure
12 A	Caregiver	Self Employed	None	Yes. Long-term and short-term saving.	Bank deposits	Christmas	Yes. Save especially for Christmas	Food, materials for construction (building a new home)

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
13 A	Cleaner	Employed, Ministry of Health	Remittance - father living in Tortolla	Yes. Long-term.	Bank deposits	Christmas, Easter	Yes	Food, Bills
14 A	Teacher	Employed, Ministry of Education	None	Yes. Long-term.	Bank deposits	All Year	No. Most money going into constructing a new home.	Home construction
15 A	Teacher	Employed. SERVOL	None	Yes. Long-term	Bank deposits	All Year	No. Income from teaching at SERVOL is low.	Food, school supplies
16 A	Hairdresser, Event planner, Artist	Self Employed	None	Yes. When I can I save long-term for my kids.	Bank deposits	All Year	No. Lack of employment opportunities in the community.	Food
17 A	Electrician, Fisher, Tiler, Hunter, Diver, Landscaper	Self Employed	None	Yes. To purchase a vehicle to sell fish	Bank deposits	All Year	Yes.	Bills, land tax

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
18 A	Fisher, Tour guide	Self Employed	Pension, NIS	No. Don't make enough to save	NA	Christmas	No. Majority of time dedicated to community work (unpaid labour)	Food, Travelling expenses
19 A	Fisher, Gardener, Sell ground seasoning	Self Employed	Pension, gratuity, NIS	Yes. Save for emergency	Bank deposits, Credit Union	School re-opening (August)	Yes. Work hard to have it.	Food, school books (4 kids in school)
20 A	Fisher, Water-trucking, Labourer with TPRC (3 months contract)	Self Employed, Employed (TPRC)	None	No. Money being used to pay off loan from the ADB for a boat and engine	NA	School re-opening, Christmas	Yes. Usually the fishing season is good before August so money is available. Oil spill may affect this year (2014)	Food, electricity school, loans

ID	Sources of earned income	Self Employed/Employed	Other regular inflows of money	Savings (Y/N)	Type of savings	Time of year cash is most important	Is cash available when needed	Majority of household expenses
21 A	Fisher, labourer (Tunapuna/Piarco Regional Corporation), Electrical technician, Water taxi	Employed, Self Employed	None	Yes. Save to make major purchases and for emergency	Bank deposits and cash	All Year	Yes	Food
22 A	Car rental business, Amalgamated Security Officer, Sell agricultural produce from family estate	Self Employed, Employed with Amalgamated Security Services Limited	None	Yes.	Bank deposits, cash, credit union	Christmas	Yes. Savings and <i>Sou-sou</i>	Food, Transport
23 A	Labourer	Employed, National Reforestation Programme	None	No. Too many expenses (children)	NA	School re-opening (August)	Sometimes. Get help from friends and relatives	Food, electricity bills, travel
24 A	Mason, Tour Guide, Foreman	Self Employed, Employed (CEPEP)	None	Yes	Bank deposits	Christmas	No. Slow work period.	Food, bills
25 A	Labourer, Sell food on weekends	Employed (Forestry Division), Self Employed	None	Yes	Bank deposits, Credit Union	School closes. Kids at home more.	Yes. Take loans from credit union, use from savings	Food

APPENDIX 5 – PHYSICAL CAPITAL

ID	Mode of Transport	Is transport reliable	Public Transport Affordable	Public Transport per round trip	Materials in home			Facilities in home				Communication/information items in home					
					Walls	Floors	Roof	Electricity	Pipe-borne water	Indoor-toilet	Outdoor toilet	TV	Computer	Stereo	Landline	Internet	Cell phone
2A	Personal vehicle	Yes	NA	NA	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
3A	Public transport	Yes	Yes		Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes (with data)
4A	Personal vehicle	Yes	NA	NA	Concrete	Concrete	concrete	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
5A	Public transport	Yes	Yes		Concrete	Concrete	concrete	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
6A	Public transport	Yes	Yes	\$50	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
7A	Public transport	No	No	\$50	Concrete	Wood	Metal	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes
8A	Public transport	Yes	No	\$30-\$50	Concrete	Concrete	Metal	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes
9A	Personal vehicle	Yes	NA	NA	Wood	Wood	Metal	yes	yes	Yes	No	Yes	Yes	No	No	No	Yes
10A	Personal vehicle	Yes	NA	NA	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes (with data)
11A	Personal vehicle	Yes	NA	NA	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes

ID	Mode of Transport	Is transport reliable	Public Transport Affordable	Public Transport per round trip	Materials in home			Facilities in home				Communication/information items in home					
					Wood	Wood	Metal	No (Takes an extension from neighbour)	Yes	Yes	No	Yes	No	Yes	No	No	
12 A	Public transport	No	No	\$30-\$40	Wood	Wood	Metal	No (Takes an extension from neighbour)	Yes	Yes	No	Yes	No	Yes	No	No	Yes (with data)
13 A	Public transport	No	Yes	\$16-\$30	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes (with data)
14 A	Personal vehicle	Yes	NA	NA	Concrete	Concrete	Metal	Yes	No	Yes	No	Yes	Yes	No	No	No	Yes (with data)
15 A	Public transport	Yes	Yes	\$30	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
16 A	Public transport	No	Yes	\$16 - \$30	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes
17 A	Public transport (owns a boat)	Yes	Yes	\$16-\$30	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes (with data)
18 A	Personal vehicle (also owns a boat)	No	Yes	\$45	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	No		Yes
19 A	Personal vehicle (also owns a boat)	Yes			Wood	Wood	Metal	Yes (solar)	No (collects rain water)	No	Yes	Yes	No	Yes	No	No	Yes

ID	Mode of Transport	Is transport reliable	Public Transport Affordable	Public Transport per round trip	Materials in home			Facilities in home				Communication/information items in home					
					Concrete	Concrete	Metal	Yes	No (collect rainwater, use stand-pipe)	No	Yes	Yes	Yes	No	No	No	
20 A	Public transport (owns a boat)	Yes	Yes	\$16	Concrete	Concrete	Metal	Yes	No (collect rainwater, use stand-pipe)	No	Yes	Yes	Yes	No	No	No	Yes (with data)
21 A	Personal vehicle (also owns a boat)	Yes			Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes (with data)
22 A	Personal vehicle	Yes			Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes (with data)
23 A	Public transport	No	Yes	\$6	Concrete	Concrete	Metal	Yes	No (well, stand-pipe)	Yes	No	Yes	No	Yes	No	No	Yes
24 A	Public transport	No	No	\$20-\$150	Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes (with data)
25 A	Public transport (family and friends)	Yes	Yes		Concrete	Concrete	Metal	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes (with data)

APPENDIX 5a – PHYSICAL CAPITAL

ID	Roads/transport		Water supply		Electricity Supply		Internet connectivity		Health facilities		Fishing facilities	
	Access	Quality	Access	Quality	Access	Quality	Access	Quality	Access	Quality	Access	Quality
2A	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor. Not up to standard		
3A	Good	Good	Good	Good	Good	Good			Don't use	Don't use		
4A	Poor	Poor	Good	Good	Good	Good	Poor	Poor	Good	Good		
5A	Good	Good	Good	Good	Good	Good	Good	Good	Good	Poor		
6A	Poor	Good (not regular)	Very Poor	Good	Good	Good	Good	Good	Good	Good		
7A	Very Poor	very Poor	Good	Good	Good	Good			Good	Very Poor		
8A	Very Poor	Poor	Good	Good	Good	Good			Good	Poor		
9A	Very Poor	Very Poor	Poor	Good	Good	Good	Poor	Poor	Good	Poor		
10A	Poor	Poor	Excellent	Excellent	Excellent	Excellent	Poor	Poor	Good	Don't use		
11A	Very Poor	very Poor	Good	Good	Good	Good			Good	Don't use		
12A	Poor	Poor	Good	Good	Good	Good	Poor	Poor	Good	Good		
13A	Very Poor	very Poor	Good	Good	Good	Good	Good	Good	Good	Good		
14A	Poor	Poor	Good	Good	Good	Good			Good	Good		
15A	Poor	Poor	Good	Good	Good	Good	Good	Very Good	Good	Poor		
16A	Poor	Poor	Good	Good	Good	Good	Good	Good	Good	Good		
17A	Very Poor		Excellent	Excellent	Excellent	Excellent	Good	Good	Good	Poor	Very Poor	Very Poor
18A	Very Poor		Excellent	Excellent	Good	Good			Good	Good	Very Poor	Very Poor
19A	Poor	Poor			Good	Good			Good	Poor	Poor	Poor

ID	Roads/transport		Water supply		Electricity Supply		Internet connectivity		Health facilities		Fishing facilities	
20A	Poor		Good	Good	Very Good	Very Good	Good	Good	Good	Good	Poor	Very Poor
21A	Poor		Excellent	Good	Good	Good	Good	Good	Good	Good	Very Poor	Very Poor
22A	Very Poor	very Poor	Good	Good	Excellent	Excellent	Very Poor	Very Poor	Poor	Don't use		
23A	Poor	very Poor	Good	Very Good	Good	Very Good			Poor	Poor		
24A	Very Poor	Very Poor	Excellent	Excellent	Excellent	Excellent	Poor	Poor	Poor	Poor		
25A	Poor	Poor	Good	Good	Good	Good			Poor	Poor		

APPENDIX 6 – NATURAL CAPITAL

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
2A	Photos for sale	Photos for sale	Photos for sale		Photos for sale		No	More pollution and coastal erosion. Natural areas for public access not adequately maintained.	Quarrying. Lack of maintenance	Coastal lands being purchased by outsiders and access by community is blocked off.
3A						Subsistence garden	No	No	N/A	No
4A	Seamoss harvesting						No	Unsustainable harvesting of seamoss	Not enough education on sustainable harvesting techniques. Some community members only driven by short term profits	Some community members do not see the seamoss as a community resource.
5A	Seamoss harvesting					Garden for food and sale	No	Beach and coastal erosion	Sand quarrying at Marianne Beach	Conflict with seamoss farmers over harvesting techniques. Some community members damage seamoss bed when trying to "make a quick hustle"

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
6A					Fishing		No	Beach erosion	Too much beach construction	No
7A						Planting cocoa and coffee	No. Family owned land.	No	Too many people cutting the trees in the watershed, affecting the water supply. Eg. christophene farming	No
8A		Bathing, drinking water	Hunting (in season) for food			Farming	Access roads to land need improving. Difficult to drive on.	Forests are being destroyed.	Excessive clearing of forested land.	No
9A		Irrigation of crops. Household use.				Farming	No	Low water levels. Destruction of the watershed.	Other farmers clearing watershed of trees.	No
10A		Irrigation of crops and bathing	Hunting (in season) for food, relaxation, exercise			Farming	Road access to farm land is in poor condition.	Increased dumping of rubbish in rivers. Clearing of watershed.	People polluting the watercourses. Poor farming practices, uncontrolled by the government.	No

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
11 A			Hunting for food (in season)			Farming - cocoa, coffee, citrus (mixed cultivation)	Condition of access road to farming land is poor.	Forests are dying out. Water levels dropping in the rivers and waterfalls.	Possibly climate change related	No
12 A		Recreation	Planting of green seasoning for sale		Fishing	Home garden	No	No		No
13 A		Household water source when there is no water	Planting of green seasoning for sale		Fishing	Home garden	No	River drying up	No	No
14 A			Planting of green seasoning for sale		Fishing	Home garden	The condition of the road to access planting site in forest is poor. Have to walk a quarter mile.	Low volume of water in rivers. Water quality in river has also declined (Increased amount of algae)	Possibly waste from a nearby hotel. The matter has never been investigated.	No

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
15 A		Recreation	Planting of green seasonin g for sale		Fishin g	Home garden, seasonings and fruit trees	Road leading to planting site in forest needs upgrading.	Lower fish catch. Rivers running dry.	Seismic surveys by oil companies affecting fish catch. Climate change affecting rivers.	No
16 A		Water for irrigating crops	Planting of green seasonin g for sale			Home garden , seasonings, corn	The condition of the road to access planting site in forest is poor. Have to walk a quarter mile.	Size of Marianne River has decreased (less water). Marianne River not aesthetically maintained.	Climate Change	No
17 A		Diving for river lobsters	Hunting		Fishin g		No	Dramatic decrease in fish catch	Since seismic surveys in 2013 there has been a serious decline in fish catch	No
18 A		Bathing and recreation	Bee keeping (to sell honey), hiking		Fishin g	Home garden	No	Decline in fish catch	Seismic surveys, climate change, human development, coastal construction	Conflicts with oil companies. No communication between oil companies and fishers.

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
19 A					Fishing	Agriculture	No	Fish catch depleting	Diesel released into sea in January 2013	No
20 A	Boat repairs	Relaxation			Fishing		Persons constructing beach-front properties and blocking access to certain sections of the beach	Fish catch depleting	Seismic surveys in 2013 affected fish spawning grounds and overfishing in spawning grounds	No
21 A	Sport, relaxation	Sport, relaxation	Hunting for food (in season)		Fishing	Home garden	Beach-front properties at Marianne beach blocking community access. Community members are being charged to go on the beach.	Depleting fish stock.	Decrease water quality, more fishers decreasing stock, some areas have become noisier causing fish to leave common grounds	No

ID	Use of community natural resources						Issues with access	Observable changes in quality of resource	Cause of changes	Conflicts over use of resource
	Beach	River	Forests	Swamp	Sea	Land				
22 A		Catch crabs for food					No	River volume lower than previous years; garbage in rivers	Farming in forests affecting quality of river	No
23 A		Bathing, everyday use	Hike			Farming/gardening	No	River receding. River dirty.	Clearing of watercress dirties the river	No
24 A			Tour guide (caves)			Subsistence farming	No	No		No
25 A		Wash at river, bathe to save water					No	No		Conflicts between residents and hunters. Residents afraid of being shot.

APPENDIX 7 – VULNERABILITY CONTEXT

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
2A			Yes							Yes			
3A			Yes										
4A				Yes		Yes-unsustainable harvesting of seamoss							
5A			Yes		Yes								
6A					Yes						Landslides		
7A	Yes						Landslides damaged crops				Landslides block access roads in and out of community . Daily electricity outages from damage to electricity lines from landslides.	Lower water level	Don't plant during the dry season. Use less water.
8A	Yes		Yes					Yes. Witch-broom affecting cocoa.			Landslides block community access roads.	Lower water levels in river	Still enough for use.

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
9A		Yes-increase in drugs and theft in the area	Yes	Yes-heat and less rain		Yes. Village Council and community members not united					Landslides-trees falling, water damage to roads, electricity lines damaged by falling trees.	Lower water levels	Use less water
10A				Yes-very hot					Yes- no help with agricultural access roads		Landslides block community access roads. River overflows onto road and bridge.	Decrease in water levels	Installed a drip system and converted to organic farming which uses less water.
11A			Yes	Yes-very hot							Landslides block community access and destroy crops.	Lower water levels	Dam water in dry season
12A			Yes				Yes-landslides caused damage to home				Landslides		

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
13 A			Yes			Yes- Village Council non-functioning	Yes- landslides block access roads			Yes- political inaction. Politicians not doing anything for the community.	Landslides		
14 A			Yes		Yes (husband is a fisher)		Yes- landslides block access in and out of community				Landslides block community access		
15 A	Yes - mother has arthritis; prevents her from selling food.	Yes- increasing crime in area affecting sense of security	Yes- shops in Blanchisseuse more expensive than outside the community	Yes	Yes		Yes. Landslides			Political inaction- SERVOL teachers are underpaid	Landslides blocks community access and caused damage to home	Lower water supply	Use water tanks

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
16 A	Yes		Yes		Yes (seafood is a major part of household diet)		Yes-storms cause flooding in home.			Political inaction	Landslides, overflowing rivers	Less water available to irrigate crops	
17 A					Yes					Lack of attention from politicians	Very heavy rains prevent fishing	Bush fires	
18 A			Yes	Yes-lower fish catch	Yes	Yes- No unity in village council, issues of trust and selfishness				No response from politicians	No water when there is heavy rain. Water pumps in the area are locked off during heavy periods of rain to prevent damage to the equipment.		Must have a tank
19 A			Yes			Yes			Oil spill killed fishing bait		Landslides block community access.	Less water available	Use a spring during dry season or transport water from elsewhere

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
20 A			Yes						Oil spill-people refusing to buy fish	Slow response from Ministry representatives	Poor drainage in certain areas result in flooding. Roads get flooded, landslides block access in and out of community.	Lower water supply	Use less water. Cater for shortages
21 A			Yes								Rain muddies water affecting amount of live bait caught for a la vive fishing, A la vive technique catches the most amount of fish		

ID	Which has your household been affected by in the last 12 months										Seasonality		Coping strategies
	Illness	Crime	Rising food prices	Climate Change	Decreased fish stocks	Community conflict	Natural disaster	Crop/livestock diseases	Other	Political decisions	Rainy Season impacts	Dry Season impacts	
22 A											Road deterioration. Costs more to maintain car.	Reduction in water supply	Drive less during rainy periods. Use the natural springs and river for cooking and drinking water during the dry season.
23 A			Yes	Yes-flooding a bit worse in recent years from rivers	Yes					Termination of bus service	Heavy flooding, poor drainage. Roof in house leaks.	Problems with obtaining water	Make temporary drains using a hoe
24 A			Yes								More landslides block community access - lost wages when roads are blocked	Reduction in water supply	Use natural spring water.
25 A			Yes	Yes							Flooding	Better conditions	