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LIVELIHOOD TRANSITIONS:

Towards Sustainable Fishing Communities in the Mesoamerican Reef Region

October, 2008

Livelihood Transitions: Towards Sustainable Fishing Communities in the Mesoamerican Reef Region

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April 2006

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About this Report:
This report was made possible through support privided by the Global Conservation Program, U.S. Agency for International Development, under the terms of Award No. LAG-A-00-99-00045-00. The opinions expressed herein do not necessarily reflect the wiews of the U.S. Agency for International Development.

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PRESENTATION

The Mesoamerican Reef region corresponds to one of the most amazing ecological, marine and coastal areas in the region. It contains the second largest barrier reef in the World and a complex coral reef system that stretches along the Caribbean Coast from Quintana Roo in México, passing through Belize and Guatemala and partially in Honduras including the Bay Islands. This zone is not only important from an ecological viewpoint but also from a social one, since more than two million persons inhabit this area, who directly or indirectly depend on the stability of coastal and marine resources for their livelihoods. From these, it is estimated that eight thousand fishers and more than forty thousand persons depend on fishery resources and a high percentage of the population depends on the development of tourist activities which in the last ten years have become their main income source.

On the other hand, the Mesoamerican Reef has a complex protected areas system which approximately covers 625 miles, which are generally managed with limited effectiveness and in some cases are described as "protected areas in paper". Management effectiveness in these areas has become one of the priorities to guarantee biodiversity and ecological stability conservation on which many economical activities of the region depend upon. Many communities perceive protected areas as obstacles to the development of their economical activities. Therefore, there is not a joint vision between managers, co managers and conservation practitioners and those who depend on the extraction of resources to guarantee their subsistence or economical wellbeing. In this complex context, it is easy to identify the rapid fall of fisheries stocks, specially of those species that are frequently used, like caracol, lobster, groupers and snappers. At the same time, it is easy to identify a rapid deterioration of the condition of ecosystems like mangroves and coral reefs, because of an inappropriate coastal development.
This document presents an analysis of the conditions from a different perspective: which has been the participation from Fisher communities in these processes? and it also tries to identify which have been the best mechanisms to offer alternatives to their economical activities. Some of the lessons learned indicate that fisheries as tourism are clear threats to the ecological integrity of the region, in the way these are currently being developed. However, making a detailed analysis of the highly vulnerable socioeconomic conditions of the region and the economic tendencies and labor offer in it, sustainable tourism and sustainable fisheries are clearly the best opportunities for alternative community livelihoods. The challenge is to identify how to develop alternatives from sustainable tourism and sustainable fisheries which allow incorporating rural communities in this case, fisheries.

The document explores the revision of some of the "community livelihood" try-outs developed by diverse organizations and projects, finding that in general terms, the proponed activities are not deficient. However, these have not been carried out in the best way, therefore, success in achieving community economical improvement has been limited and the impact over the condition of fisheries resources and biodiversity associated to these, has been rated below the expectations. The identification of opportunities for community economical alternatives requires the evaluation of regional economic trends.

The lessons learned from the analysis of conditions within the region demonstrate that there is a lack of attractive job opportunities for fisher communities in coastal zones. At the same time, the production system of the self named fishermen are complex and include various different elements within their production chain. However, it is important to highlight that this report identified that fishermen feel a particular pride in being called that way and they feel very fond of the free way of life that fisheries represent to them. Therefore, the perception of changing their way of life for a different one, that implies the word "alternative", is really rejected by many of the fishermen, particularly by those who are well economically established, or those who have many years of practicing this tradition.

On the other hand, the revision of the condition of labor supply and demand in the region and its economic trends, demonstrate that tourism is the best transition opportunity from the fisheries economical activities. The challenge is to incorporate communities to the existing tourism markets to avoid competing under highly disadvantage conditions, and at the same time create the atmosphere for the development of micro businesses that allow to have these tourism of fisheries activities as an effective and profitable solution for them.

Our findings reveal that only young fishermen and those who have diverse production Systems are more opened to exploring new opportunities. At the same time, prior experiences with a limited success percentage are not of high motivation for their participation in new initiatives. The main challenge in this activity, once the economic, social and market aspects are defied, will be to identify the impact that fisheries stocks should have, achieving the conservation goals, plus the social and economic goals that these initiatives propose.

Finally, it is important to emphasize that this document presents great opportunities and expectations for the formulation o fan alternatives program, including phases like:

- Identifying the most suitable communities, which have higher possibilities of achieving success.
- Establishing alternatives oriented by the communities
- Developing a highly participative process from bottom to top,
- Incorporating activities and products in existing markets
- Assuring that these activities have the expected conservation impact and achieve an adaptative management that allows learning and adjusting to the process without having a frustration sensation and desertion of the activities that are not as successful.

To achieve the incorporation of these elements in the future, the following are needed:

- Assure market access.
- Have enough funds to promote community activities
- Have organized communities with whom to work through cooperative or microenterprise Systems
- Ensure the incorporation of other services to reach goals both in a social and economic way.
- Focus on complementing fisheries activities and avoid trying to substitute them, but to let them as part of a natural evaluating process.
- Apply a participatory process focused on the economy diversification , maybe through women groups and not only fishermen.
- Avoid the duplication of systems practiced in the past.

The document presents an analysis of data from the region, for many of the described elements, as well as specific analyses of four years in the life of the Sian Ka'an Biological Reserve in Mexico, Cayos Cochinos Archipelago Natural Marine Monument in Honduras, Gladden Spit Marine Reserve in Belize and Punta de Manabique Wildlife Refuge in Guatemala, which allow illustrating with concrete examples the findings and relate them to the vision of microeconomics at the local level with the processes and economical trends in the Mesoamerican Region.

I hope this document placed in your hands serves as a different motivation, better focused and more effective to promote a work approach in the development of alternative livelihoods, than the intents we have performed in the past, and which allows us to promote an effective conservation through the development and creation of socioeconomic conditions for the surrounding communities.

It is The Nature Conservancy's wish and my own that through this document we may work together in the achievement of this dream.

Best regards,

Néstor Windevoxhel, M. Sc.
Director
Mesoamerican Reef Program

EXECUTIVE SUMMARY

Organizations working for the conservation of the Mesoamerican Reef have drawn attention to the need to provide coastal communities with alternative livelihoods to achieve the dual goals of reducing fishing effort and raising the economic standard of living of fishers and their families through alternative sources of income. The purpose of this consultancy was to advance this effort by identifying promising opportunities for alternative livelihoods that are acceptable to fishers and providing recommendations for project implementation based on an assessment of recent alternative livelihoods projects.

This report provides a regional and local perspective on alternative livelihood opportunities by focusing on coastal communities adjacent to marine protected areas in the four MAR countries: Sian Ka'an Biosphere Reserve, Mexico; Gladden Spit and Silk Cayes Marine Reserve, Belize; Punta de Manabique Wildlife Reserve, Guatemala; and Cayos Cochinos National Monument in Honduras. The identification of alternative livelihood opportunities involved conducting an assessment of regional and local economic trends, supply and demand for labor, and opportunities for economic diversification and fishermen perception through the formation of microenterprises. It also included a rapid evaluation of the success to date of ecoguide training programs organized to provide alternative sources of income for fishers.

The assessment methodology included a trip through the region and site visits to coastal communities; interviews with key representatives from the public, private and non profit organizations; focus groups with fishers in key MPA communities; and an extensive review of existing information and data sources.

The assessment of existing regional and local economic and labor trends show that fomenting economic alternatives for fishers will require taking into account the following:

1. ***Few attractive job opportunities exist for fishers in coastal fishing communities in the region.*** This implies that alternative livelihoods programs cannot simply tap into existing labor markets but will require the development of new products and services through attention to markets and commercialization to diversify local economies.

2. ***Fisher livelihoods are already characterized by a high degree of occupational multiplicity.*** It was found that fishers display an interest in economic alternatives as supplementary activities but they do not express an interest in a complete abandonment of fishing, which represents not only a job but a lifestyle and a part of the cultural identity of many coastal groups.

3. ***Livelihood opportunities are not equally distributed across the region.*** Due to uneven regional development patterns and corresponding discrepancies in demand for goods and services, livelihood alternatives are not equally available among communities in the region.

4. ***Tourism presents the greatest opportunity for transition.*** Overall, the growing demand for goods and services within the tourism industry clearly demonstrates the best opportunity for the promotion of economic alternatives in the region. Tourism related opportunities for fishers and their families that are described include specialized eco tour guiding, artesanal craftmaking, small guesthouses and ecolodges, development of cultural and community tourism experiences and food and beverage services targeted to tourists.

The assessment of the effectiveness to date of recent efforts to provide fishers with alternative livelihoods through ecotourism guide training revealed that this work clearly holds wide appeal to fishers as a complementary activity. In areas of relatively high tourism visitation such as Punta Allen, Sian Ka'an and Placencia, Belize, many fishers already juxtapose fishing with guiding activities on a seasonal basis. More specifically, however, the evaluation revealed the following:

1. ***Problems with recruitment of fishers:*** The programs have been characterized by recruitment difficulties due to lack of interest. Approximately 40% of participants overall were not fishers. There was a particular lack of interest amongst the older and better established commercial fishers. Recruitment problems were related to issues such as inadequate targeting of potential trainees and lack of attention to fishers' schedules in planning training.

2. ***Relatively low levels of employment success:*** Approximately 25 35% of the trained fishers currently receive some income through tourism activities. However, the program was most successful for fishers who were already involved in tourism activities before training and among younger fishers. **Fly fisher trainees faced the greatest challenges in securing employment after training. Employment success overall was impacted by the fact that the majority of trainees come from areas of low tourism visitation and express a resistance to relocation.** The assessment also revealed the need for more attention to the delivery of complementary services such as job placement, internship and mentor experiences, relocation incentives, provision of guide certification and other specialized skills to meet alternative livelihood goals.

3. ***Little reduction of fishing effort:*** The results of the training indicate that even those fishers who work in tourism continue fishing commercially. No trainees were identified that completely abandoned fishing and although it is difficult to measure, there is little indication of a significant reduction of fishing effort by any of the trainees as a result of economic alternatives.

Based on the analyses, an alternative livelihoods agenda that is phased over a five year timeframe has been developed. The agenda is based on five pillars or fundamental processes that should serve as a foundation for alternative livelihoods initiatives in the region:

1. Community based tourism development to channel benefits of regional tourism growth to fisher communities.

2. Enhanced capacity for enterprise development and management in fishing villages to diversify local economies.

3. Specialized training in fields that already provide supplementary income for fishers to promote increased access to income in those fields.

4. Technical and economic feasibility studies for new innovative activities to substitute/ mitigate fishing and enhance community incomes.

5. Research and monitoring to understand fisher livelihoods and improve adaptive project management.

Using these principles, the regional agenda for providing alternative livelihoods is comprised of the following components:

Phase 1: Identification of target communities and appropriate strategies This phase is designed to ascertain the communities in which a reasonable amount of impact and success can be achieved.

Phase 2: Establishment of community driven alternative livelihood strategies Through a series of consultative

processes with different communities, to mutually develop a plan for how best to implement strategic livelihood interventions.

Phase 3: Implementation of community based alternative livelihood strategies This phase is the longest term in which interventions will be implemented at the community level.

Phase 4: Adaptive management Monitoring and evaluation of strategic interventions will be conducted and compared against baselines derived from Phase 3 to determine impacts as well as make necessary adjustments to improve the strategies.

Finally, lessons learned in the region indicate that the long term success of alternative livelihood programs will require taking into account the following nine essential elements of success:

- Ensuring market access and demand prior to investment;
- Capitalizing on existing activities of fishers and communities;
- Enhancing success through the delivery of complementary services to meet alternative livelihood goals;
- Focusing on supplemental rather than alternative employment for fishers;
- Appropriate targeting of project beneficiaries;
- Applying a participatory bottom up approach;
- Focusing on women for diversification of local economies;
- Avoiding replication and building upon past efforts and seeking complementary partnerships.

ACKNOWLEDGEMENTS

This report could not have been carried out without the strong support from individuals in each country for the organization of site visits, focus groups, key informant interviews and the gathering of materials. Special thanks to all staff from TNC's Mesoamerican Reef Program and Adrián Oviedo, from the Fundación Cayos Cochinos for the extensive logistical support and information they provided throughout this project.

Thank also to the individuals who facilitated local contacts, arranged for transportation and generously shared their knowledge of their respective areas. These include Omar Ortiz and Eulogio Puc from CONANP; Carlos Mechel Bay in Guatemala; and Lynette Acosta and her husband Max, Peace Corps Volunteers working with the Fundación Cayos Cochinos.

A very special thanks also to Elicia Blumberg, Peace Corps Volunteer working with Friends of Nature for diligently carrying out the census of tour operators on the Placencia Province (presented in Chapter 2 and Appendix II) and for her ongoing support to clarify issues related to trainee activities. Finally, we would like to acknowledge the significant contributions of Maya Gorrez from BlueMaris Ventures to this report. Maya not only provided ongoing valuable insights based on her broad experience with fisher programs in Asia and Belize, but also comprehensively edited the first draft of the report and made extensive contributions to the community livelihoods agenda presented in section 4.4.

INTRODUCTION

The Mesoamerican Reef (MAR) is the second longest barrier reef system in the world and extends approximately 1000 kilometers from the tip of the Yucatan Peninsula of Mexico south through Belize, Guatemala and to the Bay Islands in Honduras. The reef contains high biodiversity and also covers an area of unique cultural diversity. The reef is of critical economic value for a region in which coastal and insular areas contain a population of over 2,000,000 including significant numbers of traditional Maya and Garifuna peoples. The reef provides structural protection against storms and erosion and contains extensive fishing grounds which traditional and other peoples have long relied on for their subsistence and economic livelihoods. Furthermore, the colorful corals and fish, white sandy beaches, exotic cultures and spectacular ruins of the region attract thousands of tourists a day from around the world, providing jobs to local people and revenues for government coffers.

Explosive tourism driven coastal development and population growth over the last 20 30 years have elevated concerns regarding the degradation of the reef and a clamor has been raised to adopt effective conservation measures to mitigate the anthropogenic pressures that threaten it. International donors, environmental NGOs and local conservation groups have joined with governments of the region to consolidate a system of marine protected areas and establish regulatory processes designed to reduce pressure on reef resources. These ongoing efforts for effective conservation, regulation and enforcement are critical for the sustainability of the reef. But new restrictions also reduce access to fishing grounds and represent a threat to the livelihoods and socio cultural fabric of long time user groups in communities for which reef access represents a source of subsistence and a traditional lifestyle.

In order to mitigate the economic impact of increased restrictions on reef dependent communities and reduce the number of individuals that rely on potentially damaging extractive activities, The Nature Conservancy's Mesoamerican Reef Program and numerous other organizations in the region have initiated projects designed to provide fishing communities adjacent to marine protected areas with viable yet more sustainable alternative economic options to reduce the overharvesting of reef resources. Numerous projects have been proposed and implemented. However, the broadest strategy employed to date has been a region wide training of fishers to become tourist guides in different areas of specialization (fly fishing, nature guides, diving, snorkeling, and kayaking) to facilitate their employment in the burgeoning tourism economy of the region.

The Nature Conservancy's MAR Program is interested in providing support to complement existing alternative livelihood initiatives, to expand the scale and multiply the effects of successful alternative livelihood programs and in diversifying into new areas of training and support to foment the development of new economic alternatives for fishers and fisher communities. The purpose of this report is to provide information that can guide effective investments towards these ends.

Objectives

The report involved the following objectives to contribute towards the identification of alternative livelihood possibilities for fisher communities in the MAR region.

Identification of labor supply and demand trends. This objective involved identifying existing and emerging economic sectors and activities that could offer employment opportunities to residents of local communities if training is provided or other limiting factors are

addressed. The effort focused in particular on identifying opportunities for direct resource users (fishers and their families) that could serve as alternatives to replace or reduce their utilization of natural resources and, at the same time, sustain or improve their existing economic conditions. The objective included an identification of the major limitations to take advantage of existing and emerging employment opportunities being generated in the MAR region. Results of this objective are presented in Chapter 2.

Identify commercial opportunities for the formation of microenterprises. Similar to labor opportunities, the project objectives included an identification of microenterprise formation opportunities in the MAR that could be promoted by local individuals or community groups for the provision of services that are not currently offered or are supplied by individuals or companies from outside of the communities. The consultant also identified and defined opportunities for training as well as other needs (e.g. information, investment capital) within the MAR region and populations of local communities for the formation of microenterprises. Results of this objective are presented in Chapter 2.

Assessment of results of fishers training programs. The objective of the assessment involved developing recommendations to strengthen the effectiveness, efficiency and impact of the TNC sponsored fishers training program through an increased understanding of the impact of the TNC sponsored and other fishers training programs on improvement in economic status of fishers, changes in economic behavior, and reduction of fishing pressures on ecological targets.

Within the scope of this objective a compilation was made with a list of the numbers of fishers trained and the types of training provided in the fishers training programs that have been carried out to date in the region. Information regarding impact of TNC sponsored training was compared to other fishing training programs carried out in the region. A list of other initiatives developed throughout the region to generate economic alternatives was also developed to build synergies and facilitate collaboration and the replication of successful ideas and projects. Results of this assessment are presented in Chapter 3.

Develop a Community Livelihoods Agenda. The report required the elaboration of a Community Livelihood Agenda that would constitute a unified vision to enhance and diversify economic alternatives for communities adjacent to marine protected areas in the MAR region with emphasis on the small communities adjacent to TNC's platform sites of Sian Ka'an, Mexico, Cayos Cochinos, Honduras, and Gladden Spit, Belize as well as Punta de Manabique in Guatemala. Although the agenda is regional in scope it takes into account local economic, cultural, and social differences and commonalities in formulating the vision for the region.

The agenda, presented in Chapter 4, identifies alternative livelihood opportunities that can be implemented by local communities and strategies to execute recommendations and address other limitations for locals to take advantage of existing and emerging opportunities.

Project Methodology

The above objectives were achieved through a desktop assessment of existing materials and data and a rapid field based assessment. The methodology included four specific components:

Compilation and review of existing information about the region. A compilation was carried out as well as a review of second literature and an analysis of existing data sources. Materials consulted included organizations' reports and project documents that describe community consultancies, workshops, socioeconomic and project assessments. The literature review

provided information regarding previous projects, regional and national economic trends in tourism and other areas, and the desires and aspirations of the local populations for training and other economic alternatives. This information was gathered with the assistance of the TNC MAR Program and its local partners as well as through contacts established during the field trip to region.

Creation of a multi scaled socioeconomic baseline of the region. A compilation was made using an extensive set of data and developed a baseline of key indicators to develop an understanding of regional and community based socioeconomic patterns and trends. The data sets were derived using existing national datasets obtained over the Internet, purchased from the countries' respective Statistics Bureaus or from other sources.

Community level datasets were also obtained from local surveys and census data that had been carried out by TNC's partner organizations in the platform sites and other local sources. A joint work also performed with Elicia Blumberg, Peace Corps Volunteer with Friends of Nature, to conduct a short survey of tourist operators on the Placencia province to understand demand for tourist services.

Focus group in Rio Esteban, Honduras © Matthew McPherson

Interviews with key informants and reconnaissance visits: The majority of the information used in the report was obtained during a trip through the MAR region that took place from February 5 28, 2006. The reconnaissance trip through the region began in Cancun, Mexico and ended in La Ceiba, Honduras and travel took place primarily by land and sea. During the trip, rapid site visits were conducted to key communities in the three platform sites and Punta de Manabique. Other visits included the offices of government officials, TNC partners and other key stakeholders in major coastal cities in the four countries.

The methodology employed during the site visits included: a) Informal and semi structured interviews with key informants to generate qualitative information focused on local socioeconomic trends, dimensions of labor and commercial demand and opportunities, fisher training programs and other alternative livelihood projects and; b) Focus group and individual interviews with fishers who have participated in TNC sponsored training initiatives at each site designed to generate an understanding of the impact of the training on their economic behavior, use of resources and quality of life.

TNC and/or its local partners provided logistical support to identify and establish a schedule of interviews with key informants (e.g. local authorities, community leaders, representatives of government ministries, business men and employers, representatives of NGOs and grassroots organizations) and to organize the focus groups with fishers. In Mexico, Omar Acosta and Eulogio Puc of CONANP participated in the visits. In Guatemala, Carlos Mahual of TNC, and in Honduras, Lynette Acosta, PVC with the Fundación Cayos Cochinos. A full list of field contacts is provided in Appendix I.

CHAPTER 1

REGIONAL AND LOCAL ECONOMIC TRENDS IN THE MAR REGION

Promoting alternative economic livelihoods will require identifying activities that will take advantage of existing and emerging markets for labor, goods and services at the regional and local levels. The viability of activities to promote alternative livelihoods will depend first of all on the local economic context. In turn, the local economic context depends on broader economic trends in the region.

This chapter provides an overview of the major socioeconomic trends and sectors in the MAR region and local communities in platform sites as a first step in identifying regional and local market based opportunities for alternative livelihoods. It begins with a review of major regional demographic and economic trends. This is followed by a description of population and economic trends in the platform site and Punta de Manabique communities. This information sets the stage for the more detailed assessment of demand and opportunities for alternative livelihoods provided in Chapter 2.

1.1 Regional population trends

1.1.1 Demographics

The four countries within the Mesoamerican Barrier Reef region (Mexico, Belize, Guatemala and Honduras) include a total of 34 coastal and insular municipalities/ districts with a total estimated population in 2005 of around 2,100,000 people.[1]

Approximately 52% of the population of the region is located within six municipalities in the Mexican state of Quintana Roo. Furthermore, the bulk of the population, including the major urban centers, is concentrated within 20 miles or less of the coast. The highest density coastal populations occur in northern Quintana Roo and in Guatemala and Honduras.[1]

The region not only has a large population but also displays an explosive population growth rate of 4% a year since 2000. Population growth has been most pronounced in areas of rapid tourism development in the northern Quintana Roo municipalities such as Benito Juarez (Cancun/Playa del Carmen) with an annual growth rate of approximately 6% a year over the past 10 years and Solidaridad (Riviera Maya) with 17% a year growth over the same period.[2]

Very high total fertility rates, ranging from an estimated 3 to 5 children per female throughout the region, also contribute to population growth. In some areas, however, high fertility is being offset by emigration. For example, the municipalities of Livingston and Puerto Barrios in Guatemala as well as Brus Laguna and Puerto Lempira in Honduras have been stable or experiencing a slow overall decrease in population over the last 10 years (Table 1).

1 From this point forward all references to the MAR region refer only to the coastal municipalities and not the full region, which includes municipalities within the watersheds that drain into the coastal area.

Table 1
Summary of Municipal Coastal Demographic Indicators by Country

Country	Number of Municipalities	Estimated population (2005)	% average yearly population growth rate (intercensal period)	Estimated population density 2005 (per km2)	% population living in urban areas
Belize	4 (districts)	174,900	2.08	14.75	53.6
Guatemala	2	127,038	-.69	35.79	45.4
Honduras	22	700,577	3.02	25.63	66.3
Mexico	6	1,075,647	4.67	30.87	86.6

Sources: Calculated by author based on data from the CSO 2000a; INE Honduras 2001; INE Guatemala 2002; and INEGI 2000.

1.1.2 Regional Development and Economic Indicators

Human Development Index Levels

The Human Development Index is a generally accepted UNDP measure of development based on relative achievement in economic growth, education and health. Municipal level HDI figures for MAR coastal municipalities show a wide variation of human development levels throughout the MAR region ranging from Arizona and Balfate, Honduras that display HDI values just above .6 reflective a low "medium level of development" to Juan Santos Guardiola in the Bay Islands, Honduras and Benito Juarez and Cozumel in Mexico that display HDI levels of over .8 commensurate with a high level of development (UNDP Mexico 2003; UNDP Honduras 2003).[3] Also overall indicators of income, education and human development for economic and other conditions in Quintana Roo are significantly higher than for the rest of the MAR coastal region (Table 2).

General Labor Force Indicators[4]

Labor Force Participation Rates range from a high of 60% in Belize to 36.5% in Honduras. The low LFPR figures that predominate in most of the region are indicative of a low level of formal sector employment opportunities. As will be discussed in much greater detail in the section below, agriculture remains the primary source of employment overall in the region. However, activities linked directly and indirectly to tourism clearly represent the most important provider of employment in Quintana Roo and rival agricultural activities as the primary source of employment in Belize. Earnings and productivity are also highest in Quintana Roo where the reported GDP per capita in 2000 was US$10,160, more than double that reported for any other municipality in the MAR region. In contrast, average per capita GDP in the Honduran municipalities was only $2520 in 2003 (Ibid).

Table 2
Average of Selected Indicators of Service Access for MAR Coastal Municipalities

Country	% with sustainable access to water	% with sustainable access to sanitation	% of Population with no education	% of Population with only Primary Education	% of Population with Secondary Education
Belize	79.4	91.4	26.8	50.7	18.1
Guatemala	85.1	82.6	25.1	52.8	18.6
Honduras	85.4	73.8	16.5	59.2	16.8
Mexico	90.1	83.5	12.3	40.5	46.1

Sources: Calculated by author based on data from the CSO 2000; INE Honduras 2001a; INE Guatemala 2002; and INEGI 2000.

1.2 Regional economic sector trends

The region is characterized by uneven economic development at a regional scale particularly in relation to tourism which, along with agriculture, constitutes the most important economic sectors for employment and earnings in the MAR region. Fishing and fishing related activities are of relatively low importance if viewed in terms of overall regional employment and economic contribution. However, the aggregate figures do not necessarily reflect the value of the sector due to the fact that in many coastal communities fishing represents the main source of employment and a traditional livelihood. The region only has a small manufacturing sector. Other sectors of economic importance include construction, transportation and wholesale and retail commercial activities.

1.2.1 Tourism

Tourism represents the most important economic sector for labor absorption and revenue generation in the northern part of the MAR region. In those areas where tourism is already well entrenched such as northern Quintana Roo, central Belize and in the Bay Islands of Honduras projections indicate continued robust growth in tourist visitation into the future. Tourism is also viewed as the hope for future economic growth throughout the region and governments and international organizations have numerous plans to extend tourism activities into undeveloped areas with tourist potential.

Current Economic Contribution of Tourism. *Quintana Roo*: The magnitude and importance of tourism in Quintana Roo is reflected in the fact that the state is responsible for over 30% of tourism related exchange earnings in Mexico, a country that the WTTC ranks as having the 10th largest travel and tourism economy in the world (WTTC 2006; SECTUR 2006). Quintana Roo currently receives over 10,000,000 overnight and cruise ship visitors a year and the state has an average daily tourist population of over 65,000 people (Ibid; IDB 2004). Mass tourism development is concentrated in the northern part of the state and is dominated by large resorts that cater to "sun and fun" beach tourists.

Hotel and restaurant services employ approximately 18.9% of the economically active population in the coastal municipalities of the state overall but this sector is far more important in Solidaridad (Riviera Maya) where 33.5% of the economically active population is employed in the hotel and restaurant sector and in Benito Juarez (Cancun), Cozumel and Isla Mujeres, where the sector accounts for more than 20% of the EAP. (INEGI 2000). Furthermore the EAP dependent on tourism

Table 3
Summary of Selected Economic Indicators

Country	Average GDP per capita (US PPP)[1]	Labor Force Participation Rate[2]	% Reported Employment in the Agricultural Sector[3]	% Employment in Tourism activities[4]	Fishers and fish processing as a % of PEA[5]	Hotel Rooms per Capita[6]
Belize	n/a	60	20.1	6.2	3.7	45
Guatemala	n/a	36.7	39.7	*17.6*	3.8	n/a
Honduras	2520	36.5	n/a	n/a	n/a	n/a
Mexico	10160	58	8.4	18.9	0.6	18.1

Sources: [1] UNDP Mexico 2003; UNDP Honduras 2003. [2] CSO 2005; INE Guatemala 2002; INE Honduras 2001; INEGI 2000. [3] CSO 2000a; INE Guatemala 2002; INEGI 2000. [4] CSO 2004; INE Guatemala 2002; INEGI 2000. Tourism figures for Guatemala include commercial sector activities and are not comparable with the Belize and Mexico figures which only include activities related to the hotel and restaurant sectors. [5] CSO 2000a; Heyman and Graham 2000c; INEGI 2000. [6] BTB 2004; SECTUR 2006

is probably double in these municipalities if employment provided by indirect linked activities such as tour agencies, car rentals, souvenir shops, transportation and construction is taken into account.[5] In contrast, the two southern municipalities of Felipe Carrillo Puerto and Othon P. Blanco only receive approximately 4% of all overnight visitors to the state and the hotel and restaurant sector accounts for less than 5% of the EAP.

Belize: Belize is not particularly rich in typical "sun and fun" beach vacation resources compared to its northern neighbors. Tourism in the country therefore relies on smaller scale adventure and experiential tourism based on the country's coral reefs, sub tropical rainforests and archaeological resources (Tierney 1999). San Pedro is the country's largest tourist destination with extensive hotel and resort development. Caye Caulker, Dangriga, Hopkins and Placencia are the other important tourism destinations and Belize City is the focal receiving point of cruise ship visitation.

In 2004, Belize received a total of 215,000 overnight visitors and approximately 850,000 on board cruise ship visitors that travel to destinations proximal to the port in Belize City. Tourism directly employed 1 in 9 Belizean workers and when including indirect employment was responsible for up to 23.1 % of total labor force participation in the country (WTTC 2004a; CSO 2004). Furthermore, 23.5% of Belize's GDP is directly or indirectly tied to tourism activities, one of the highest tourism dependency rates in the Caribbean region (WTTC 2004b). In the MAR coastal districts, direct employment in tourism accounts for 16% of the EAP in the Belize district, 15.5% in the Stann Creek district, 8.5% in the Toledo district and 4.8% in the Corozal district (CSO 2004). Tourism related employment is also expected to grow at an annual rate of 4.8% over the next 10 years (WTTC 2004a).

Guatemala: In 2005 tourism was responsible for 2.6% of total employment in Guatemala and 2.9% of the country's GDP. Tourism employment in the country is expected to grow at 3.3% a year and contribution to GDP at 3.6% a year over the next 10 years (WTTC 2005a).

The MAR coastal municipalities represent a relatively small overall contribution to tourism at a national level. In 2004, the Izabal province accounted for 7.1% of the national capacity in hotel rooms and an estimated visitation of 50,000 60,000, representing approximately 5% of total arrivals to the country (ACS 2005).[6] Livingston is the most important destination for international visitors in the province with an estimated 40,000 visitors a year, primarily short term low budget backpacking adventure tourists. Cruise ship tourism is also becoming increasingly important in Puerto Barrios and in the 2005 6 season received 29 calls by cruise ships or approximately 60,000 visitors on board (Quitro Osorio Pers. comm.).

Honduras: Tourism was responsible for an estimated 8.5% of total employment in Honduras and 4.4% of GDP in 2005 (WTTC 2005b). The Bay Islands (Roatan, Guanaja and Utila) is the most important Honduran tourist destination in the MAR region. Nevertheless, the Bay Islands only accounts for approximately 8% of all rooms in the country. In 2004, Roatan received 31,000 air arrivals and over 150,000 cruise ship visitors (IHT 2005).

The most important coastal destinations are Omoa, La Ceiba and Tela. The only available visitation figures are for Omoa, which received a reported 63,000 tourists in 2003 although only 4000 of these were international visitors. La Ceiba has 66 hotels and Tela has 43 hotels (Ibid). Unfortunately however disaggregated data could not be obtained to provide a more precise idea of the overall importance of tourism for employment in the region vis à vis other sectors of the economy.

Expansion of the Tourism Sector.
Continued growth of tourist visitation is forecast for existing tourist destinations in the MAR region. For example, visitation in Quintana Roo is expected to grow at an average of 6.9% annually over the next 10 years and Belize is expected to see annualized increases in tourism demand and GDP of 5.6% and 6.2% respectively (WTTC 2004a). Areas with low tourism visitation such as the Toledo area and southern Quintana Roo will likely benefit from the spill over of overall visitation increases. However, more important for undeveloped areas than projected growth rates are existing plans for tourism development. These suggest possible rapid expansion in the demand for tourism services in many key areas of the MAR coastal region including the platform sites and Punta de Manabique. Existing projects include the Plan Puebla Panama; the Costa Maya project; and plans for Honduran resort development and cruise ship expansion, as described in more detail below.

Plan Puebla Panama: The PPP constitutes an extensive plan for regional economic integration of southern Mexico and Central America. The project is being led by the governments of the region as well as the IDB.

The PPP focuses on developing regional tourism through improved regional road networks and the Mundo Maya Sustainable Tourism project. Already the Southern Highway that links the Toledo province and Guatemala to northern Belize is nearly complete. Furthermore, in the last year a newly paved highway was inaugurated between Puerto Barrios and San Pedro Sula, facilitating land travel to destinations in northern Honduras such as Puerto Cortes and Omoa. The improved road network promises to enhance tourist mobility; increase regional circuit tour development; and provide easier access to previously marginalized areas such as Toledo in Belize.

Table 4.
Selected Tourism Indicators for Key MAR Areas

Place	Overnight Visitors 1993	Overnight Visitors 2003	Daily Tourist Population 2003	Projected Growth Trends (next 10 years)	Cruise Ships Visitors 2005
Northern Quintana Roo	2,982,376 (entire state)	5,596,198	65,422	6.9% (entire state)	2,738,189
Southern Quintana Roo	n/a	228,000	1,800	Plans to develop the Costa Maya	650,263
Ambergris	23,500	50,500	950	n/a	n/a
Belize District	31,000	38,500	750	5.6% (entire country)	850,000
Stann Creek (Hopkins/ Dangriga)	6,200	15,642	300	n/a	n/a
Placencia	3,500	14,245	270	n/a	n/a
Toledo	9,500	12,000	50 100	n/a	n/a
Livingston	n/a	40,000	220	n/a	n/a
Puerto Barrios	n/a	10 20,000	50 150	Growing cruise ship visitation	60,000
Omoa	n/a	63,076 (only 4,076 foreigners)	n/a	n/a	n/a
La Ceiba	9,280 (air arrivals to Goldson)	6,866 (air arrivals to Goldson)	n/a	n/a	n/a
Bay Islands	20,989 (1996) (Air arrivals to Roatan)	28,368 (air arrivals to Roatan)	1,165	n/a	161,580 (Roatan)

Sources: Quintana Roo, Toledo, Omoa (IDB 2004); Ambergris, Belize District, Stann Creek and Placencia (McPherson 2005; estimates by author using BTB 2004) Bay Islands,La Ceiba (IHT 2005)

The Mundo Maya Sustainable Tourism Program (PTSMM) is designed to foment regional sustainable socioeconomic development and the preservation of historical, environmental, and cultural heritage in Guatemala, Honduras, El Salvador, Belize and southern Mexican through the promotion of low impact cultural and ecotourism activities in the Mayan dominated areas. Current investment plans focus primarily on the restoration of Mayan Archeological areas and incorporation of Mayan communities into a regional tourism circuit. However, the Mundo Maya clearly intersects with the Mesoamerican Reef area. The PTSMM proposes incorporation of areas such as the Sian Ka'an Biosphere Reserve, Punta Gorda and Omoa, Honduras as part of a proposed marine link into the Mundo Maya circuit (IDB 2005). The IDB/PTSMM tourism assessment also ranks the Toledo district as a high potential tourism site and program investment plans currently include an improved port and Visitors Center in Punta Gorda (IDB 2004).

Costa Maya project: Ongoing plans by the Mexican government to open southern Quintana Roo to tourist development include the construction of an international airport in Tulum and the Costa Maya development project. The Costa Maya project encompasses the area between Punta Herrero in the Sian Ka'an Biosphere Reserve and Xcalac/Chetumal in the extreme southern part of the state. The project proposes a model of low density, high quality tourism development that will take advantage of the protected areas in the region such as Sian Ka'an and the Banco del Chinchorro. The first stage of the project proposes the installation of 3500 hotel rooms, a golf course, beach clubs and commercial and recreational areas at Pulticub at the entrance to the Sian Ka'an Reserve. By 2020 it is hoped that the Costa Maya will attract an estimated 360,000 overnight visitors a year, providing 14,000 jobs and generate more than half a billion dollars in foreign exchange earnings (FONATUR 2005).

Honduran resort development: A resort development project is underway in Tela, Honduras that promises to significantly expand tourism visitation in that area.

Cruise tourism. Cruise tourism in the Caribbean has grown faster over the past decade than land based tourism and this trend is likely to continue. Cruise ship lines continue expanding, requiring new destinations and new attractions. Although the overall economic contribution of cruise tourism is much less significant than overnight visitation, cruise ships require a diversity of attractions to provide day trips and provide employment opportunities for tour guides, transportation service workers, handicraft production and sales and among other commercial activities.[7]

Areas of high recent cruise ship growth include Belize, Mahahual in the Costa Maya and Puerto Barrios Guatemala. Belize has experienced phenomenal growth in the cruise sector in the last 10 years and in 2004 received 406 calls by cruise ships with a total of over 850,000 passengers on board (BTB 2004) who spend no more than seven hours on land. Cruise ship visitation in Mahahual has been promoted as part of Costa Maya development and since the opening of a port in the early 2000s has gone from virtually no visitors to over 500,000 on board visitors in 2005. Finally, Puerto Barrios appears to be on the verge of a boom in cruise ship visitation. The 2005 6 season included 29 calls with approximately 60,000 on board visitors. However, the tourism committee of Puerto Barrios has been working to attract major cruise lines and recently established a center in the Port of Santo Tomás to receive cruise ship visitors. They hope to receive up to 70 calls in 2006 7 which would involve over 150,000 on board visitors and approximately 70,000 tourists that would actually get off the boat for tours and shopping.

1.2.2 Agriculture and Forestry

Agricultural and forestry represent the traditional economic base for the MAR region municipalities and continue to be very important on a regional scale for the absorption of labor and generation of revenue.

Although the economy of Quintana Roo is dominated by tourism and the agriculture and forestry sectors only employ approximately 10.5%

of the EAP overall, southern Quintana Roo remains highly dependent on those sectors. In Felipe Carrillo Puerto, agricultural and forestry activities employ almost 50% of the EAP. Most agriculture consists of family farms dedicated to cultivation of traditional crops such as beans and chili peppers as well as small scale livestock production and apiculture. The municipality also produces 190 tons of chicle a year and 35,000 m^3 of precious woods for export.[8] In Othon Blanco, agriculture and forestry activities are responsible for employment of 20% of EAP. Most important is sugar cane production. Vegetables and fruits cultivation, primarily chili peppers and oranges, are also important and the municipality is the primary producer of livestock in the state (Ayuntamiento 2005).

In Belize, tourism is the most important foreign exchange earner but agriculture remains the most important sector for direct absorption of labor and distribution of income (Vasquez pers. comm.). Agriculture and forestry account directly for 20% of the EAP in the country and 9% of GDP (CSO 2004a; CSO 2004b).

Sugar cane farming and processing are the main agricultural activities in the northern districts of Corozal and Orange Walk and account for 18% of the EAP in those two districts.[9] Citrus plantations and family based citrus farms dominate central Belize, accounting for 17% of the EAP in the Stann Creek district.[10] Banana farming is the most important activity in central southern Belize and occupies 14% of the EAP in the Stann Creek district and 12% of the EAP of the Toledo district.[11] In the Toledo district another 36% of EAP is occupied in small scale family based production of mixed produce and cacao produced for export to Europe (Ibid).[12]

The economy of the Puerto Barrios area in Guatemala historically has been dominated by vast agroindustrial operations focused on banana production. Bananas on many of the traditional plantations are now being replaced by African palm. Agriculture continues to hold a predominant importance for employment in the area, with 64% of the EAP in the Livingston municipality and 27% of EAP in Puerto Barrios occupied in the sector (INE Guatemala 2002). Besides employment on the large plantations, small family farms with mixed cropping systems remain important in the interior areas of two Guatemalan municipalities.

Agriculture also remains the most important economic activity in the northern Honduras municipalities. However, data is not available to provide estimates of employment in the sector.

1.2.3 Fishing and Fish Processing

There are over 6000 fishers in the insular and coastal municipalities extending from Holbox in Quintana Roo to La Ceiba, Honduras. Nevertheless, fishing and fish processing represents a relatively low percentage of employment in all coastal municipalities and probably only exceeds 5% of PEA three municipalities in the region.

Quintana Roo.
There are approximately 2000 fishers in Quintana Roo. The majority of fishers participate as members in of one of 29 fishers cooperatives in the state. Most fishers are located in the northern part of the state in the area extending from Holbox to Puerto Morelos. The southern part of the state, encompassing the area between Cozumel and Chetumal Bay, only includes approximately 30% of fishers in the state.

Fishers account for less than 1% of the EAP in all of the costal municipalities except Isla Mujeres where they account for almost 10% of the EAP. Also, in 2000 the total value of catch in the state was approximately $192,106,000 pesos accounting for less than 1% of the state's GDP. However, the per capita income of fishers is reportedly twice that of the national average and the highest in the region providing a clear incentive for continued fishing activity. Approximately 65% of

all production is consumed in Quintana Roo with the primary final purchasers of fish and seafood being the hotels and restaurants in Cancun and the Riviera Maya (IIT 2001).

Belize.
Belize has a total of approximately 1800 2000 small scale commercial fishers. Some 66% of these come from the Sarteneja village in northern Belize. Most of the Sarteneja fishers base themselves in Belize City and fish all along the Belizean coast (Majil pers. comm.).[13] There are only around 200 fishers in southern Belize in the area extending from Monkey River to Barranco. Shrimp aquaculture on large farms is important in Stann Creek and accounts for a large part of employment in the sector in that district.

Fishing and fish processing activities accounted for 2.4% of the EAP at a national level and 2.5% of EAP in Belize district, 3.9% in Corozal, 6.5% in Stann Creek and 1.5% in Toledo. Marine exports contributed approximately 4.5% of GDP in 2004 (CSO 2004b). Farmed shrimp represented approximately 79% of the value of marine exports. Lobster is the primary naturally harvested marine export and accounted for approximately 15% of the value of marine exports.

Guatemala and Honduras:
There are approximately 1500 fishers in the Amatique Bay area. Fishing accounts for 7.7% of EAP in the Livingston municipality and 1.1% of the EAP in Puerto Barrios (INE Guatemala 2002). The vast majority of fishers are artesanal Garifuna and mestizo fishers but there is also a politically and economically important group of 60 semi industrial shrimp trawlers based in Livingston that operate in the Amatique Bay area. Many Guatemalan fishers remain highly dependent on licit or illegal fishing in Belizean waters in areas extending from Gladden Spit/ Glovers Reef to the Sapodilla Cayes.

Little information is available regarding numbers of fishers in Honduras. Heyman and Graham (2000c) estimated 647 fishers in the coastal area from Rio Motagua to Tela. But there are also a significant number of fishers in the Bay Islands and in the La Ceiba municipality for which figures are not available.

1.2.4 Manufacturing and other activities

There is little manufacturing activity in the MAR region. Small scale industrial activities are concentrated in the major port cities of Puerto Barrios and Puerto Cortes. The other activities of economic importance for labor in the region include construction, transportation, wholesale and retail trade activities, and government services which as a whole account for a large percentage of the EAP throughout the region.

1.3 Local economies in the platform site communities

The coastal communities within and adjacent to the platform sites and Punta de Manabique are subject to the regional economic trends described above but also have distinctively local socioeconomic situations that will need to be taken into account when planning for alternative livelihood activities. The following sections provide a brief overview the demographic and socioeconomic conditions in these communities. This description of the local context provides a foundation for understanding the analysis of alternative livelihood opportunities provided in the next chapter.

1.3.1 Sian Ka'an Biosphere Reserve Coastal Communities

The Sian Ka'an Biosphere Reserve which is located in the center of the state of Quintana Roo is increasingly subject to vice like coastal development pressures from the Riviera Maya to the north and the Costa Maya to the south and represents a barrier to continued mass tourism infrastructure development coming from both directions. In the north, the small hotels from Tulum extend almost to the northern Arco Maya entrance of the Reserve. In the south, plans currently exist to develop a tourism hub and 3500

hotel rooms on the coast adjacent to the southern entrance of the reserve at Pulticub.
The Mexican authorities that oversee the reserve have promoted low impact ecotourism to generate revenue for park management and provide sustainable economic alternatives for reserve communities. In light of these policies, tourist visitation to the Sian Ka'an Reserve has grown progressively reaching a recent average of over 50,000 visitors a year, although in 2005 visitation was down to 38,573 visitors as a result of the impact of Hurricane Wilma in the state (CONANP 2006).[14]

Restaurant of the Punta Allen Tourism Cooperative © Matthew McPherson

Some 10 peripheral communities/ejidos are considered to be within the direct area of influence of the Sian Ka'an Biosphere Reserve along the terrestrial perimeter. Another three coastal communities are located within the reserve: Javier Rojo Gomez (more commonly referred to as Punta Allen); Maria Elena and Punta Herrero.[1,16]

Punta Allen is located in the heart of the Sian Ka'an Biosphere Reserve on the tip of a peninsula that juts into the northern part of Ascension Bay. Access to the community is either by boat or via a 1 ½ hours drive from Tulum along a sandy and pitted road. The road becomes impassible during heavy rains and constitutes an impediment to access the community. The village currently contains a population of approximately 450 inhabitants and 120 houses. In contrast to the Garifuna communities of the platform site in Belize and Honduras, commercial fishing is not a longtime traditional practice of the residents of the community. Many of the individuals who began fishing for lobster in the late 1960s were former farmers and urban workers who migrated to the area. Nevertheless, lobster fishing expanded rapidly in the mid 1970s with the growing influence of tourism in Quintana Roo. Despite a period of crisis after Hurricane Gilbert, the highly productive lobster fishery, which is responsible for 15 20% of total lobster production in Quintana Roo, remains the foundation of the local economy (Solares Leal & Alvarez Gil 2003).
Lobster fishing now exists in juxtaposition to tourism related activities and services, which have become an increasingly important source of income for the community since the mid 1990s.[17] Most fishers in Punta Allen fish for lobster during the season (July 1st to February 28th) and engage in tourism activities late in the season and in the off season (November to June) to optimize their time and earnings. Punta Allen has received support from the authorities, access to credit through local cooperatives, marketing support and ongoing collaboration from national and international organizations in order to develop a growing and successful community based ecotourism industry.[18] Tourism has now supplanted fishing for finfish in the lobster off season. The village has a few stores, small businesses and restaurants that cater to locals, but there are no other significant productive activities other than fishing and tourism to support the local economy.

Punta Allen has become regarded as a model for the sustainable community management of its lobster fishery. The Vigia Chica Fishers' Cooperative was granted an exclusive 20 year concession to marine territory in Ascension Bay that functions much like the *ejido* system for agricultural lands. The concession is divided

amongst approximately 50 of the 84 cooperative members into privately controlled fishing grounds or *campos*.[19] The lobster fishers are not owners but retain rights of exclusive access to particular campos very similar to private tenure. The rights are sustained by formal documents and transferable by inheritance (*succession*), cession or sale to another member of the cooperative.[20] This system allows the cooperative to maintain tight control over access to the lobster fishing grounds. Furthermore, Punta Allen fishers have adopted the use of artificial habitats called lobster shades or "casitas cubanas," which appears to be a more sustainable system of lobster harvesting than traps, nets and hooks by allowing for selective harvesting of species within legal size limits and avoiding berried females.

Punta Herrero is located approximately 1 hour drive from the town of Mahahual and 2 ½ hours from Felipe Carrillo Puerto. Punta Herrero (and the nearby settlement of Maria Elena) differs from Punta Allen in that it is a permanent fisher outpost where fishermen bring in and sell the catch. The majority of fishers in Punta Herrero maintain their families and primary homes in the city of Chetumal. The regular population of the village is therefore dominated by adult males who spend most of their time in Punta Herrero and periodically travel back and forth to the city.[21] There are approximately 30 permanent houses in Punta Herrero, a primary school building that is in disuse and other permanent infrastructure.[22] Like Punta Allen, the economy of Punta Herrero is based on lobster harvesting although fishing for finfish remains important in the off season for lobster. Similarly, the outpost has a fisher's cooperative based in Chetumal and a territorial marine concession in the Bahía Espiritu Santo divided into campos. There are 45 fishers in Punta Herrero, all are members of the fishing cooperative although only 21 own campos.

Punta Herrero receives regular but very small scale tourist visitation and has received assistance from UNEP and CONANP to develop ecotourism services. The tourism cooperative includes 21 members, all fishers, and operates as a branch within the fishers cooperative. Through the different projects, fishers have received training in fly fishing, in bird watching and English language. The community also developed tours, a brochure and a website to market tourism in the community, although the website is no longer functioning and most tourists arrive via a resort located in Mahahual.

1.3.2 Communities of Gladden Spit and Silk Cayes Marine Reserve

There are no communities within Gladden Spit and Silk Cayes Marine Reserve (GSSCMR) although the area has become increasingly important as a tourist attraction over the last 10 years. Whale shark tourism increased from 2 tour operators in 1998 to a reported 15 or 16 currently. Furthermore, whereas approximately 500 whale sharks tourists were recorded in 2001, in 2004 (April, May and June) FON data shows 1,299 whale shark tourism visits, an increase of 160% over 2001 visitation figures. In the first two quarters of 2004 FON registered 3204 total visits to GSSCMR, with 87.6% (2,807) of these visits tourism related,

Punta Herrero, Sian Ka'an Mexico © Matthew McPherson

primarily snorkeling (44.7%), scuba diving (27.4%), and kayaking (8.7%). At the same time due to restrictions and overfishing the area has become increasingly less important as a local fishing ground.

There are a total of 6 peripheral villages that are considered to be within the direct area of influence of GSSCMR: Hopkins, Independence, Placencia, Seine Bight, Sittee River, and Monkey River. The total population for all six communities in 2000 was 5,652 and projections would place the current population at approximately 6,546 (Table 5).[23]

The population displays considerable ethnically diversity. The communities of Seine Bight and Hopkins exhibit a predominantly Garifuna population and Creoles predominate in Placencia, Independence and Monkey River. Mayan and mestizo populations are also growing in many of the communities.

Table 5
Projected Population in GSSKMR Communities, 2001 to 2004

Community	Population 2000	Growth Rate 1991 to 2000	2001	2002	2003	2004
Hopkins/Commerce Bight	994	2.33%	1017.15	1040.83	1065.07	1089.87
Mango Creek/Independence	2881	4.80%	3019.16	3163.94	3315.66	3474.66
Placencia	458	2.49%	469.41	481.11	493.10	505.38
Seine Bight	831	5.71%	878.48	928.67	981.73	1037.82
Sittee River	312	0.14%	312.45	312.90	313.34	313.79
Monkey River	176	-0.61%	174.92	173.85	172.79	171.73
Total	5652	3.74%	5863.14	6082.17	6309.39	6545.09

Source: CSO 2000. Growth rates calculated by author

Table 6
Primary Industries in Which GSSCMR Employed Individuals Work, 2000

Industry	Male	Percent	Female	Percent	Total	Percent
Tourism	202	17.1%	233	39.2%	435	24.5%
Construction	251	21.3%	9	1.5%	260	14.7%
Wholesale and Retail Trade Repair	130	11.0%	80	13.5%	210	11.8%
Bananas	155	13.1%	41	6.9%	196	11.0%
Fishing and Fish Processing	137	11.6%	38	6.4%	175	9.9%
General Government Services Compulsory Social Security	76	6.4%	80	13.5%	156	8.8%
Community Social and Personal Service Activities	40	3.4%	70	11.8%	110	6.2%
Others	189	16.0%	43	7.2%	232	13.1%
Totals	1180	100.0%	594	100.0%	1774	100.0%

Source: Belizean Census 2000. Data extracted from CSO database at www.cso.gov.bz

The villages surrounding GSSCMR demonstrate greater economic diversity and a wider array of local employment and small business opportunities than the smaller and more isolated coastal communities of Sian Ka'an. In 2000, the primary employment sectors in the GSSCMR communities included tourism (24.5%), construction (14.7%) and wholesale and retail trade repair (11.8%). Fishing and fish processing (including employment in the shrimp farms) employed 9.9% of the population. Employment also demonstrates gender based differences. The primary employment industry for males was construction (21.3%) and for females was the tourist industry (39.2%). Females are also more frequently employed in government services and community, social and personal service activities, whereas males are clearly dominant in agricultural activities and fish and fish processing (Table 6).

Tourism has diversified the local economy and in particular provided opportunities for women to enter the workforce. New economic opportunities include: setting up or managing guesthouses, crafts shops, cultural tourism, tour guides and tour operators, waiters, bartenders, dive instructors, boat operators, setting up small businesses and shops, and taxi drivers. The boom in construction of hotels and retirement homes also is of increasing importance for local employment. The shift towards tourism also clearly favors the employment of women, who constituted 53.6% of all the economically active population in GSSCMR communities working in tourism related places of employment. This includes a division of labor with men dominating tour guide opportunities and women tending to predominate in services such as hotel/guesthouse owners and managers, shop owners and workers and restaurant owners and workers.

As a result of these new tourism opportunities, the populations of these former fishing and agriculture dependent villages have become increasingly reliant on tourism activities for income.[24] In 2000, 36% of the economically active population in Hopkins, 55.8% in Placencia, 40% in Sittee River, 61.1% in Seine Bight, 10% in Independence and 15.4% in Monkey River reported their place of employment as tied to a tourism related activity.[25]

At the same time that tourism related employment has increased dramatically, the numbers of fishers has remained stable or perhaps declined slightly during the same period (McPherson 2005).[26] In the 2000 census, 7.5% (133) of all employed individuals in the GSSCMR communities reported fishery related employment as their primary occupation. The average for Hopkins was higher at 12.1%. Fishing remains important but the overall contribution of commercial fishing to the local economy is probably declining

Table 7
Percentage of Tourism, Farming and Fisheries Related Employment, Hopkins vs. All GSSCMR communities

	Hopkins			All GSMR Communities		
	Males	Females	Total	Males	Females	Total
Tourism Related*	6.9%	36.1%	18.1%	7.8%	28.7%	14.8%
Farming Related*	12.1%	5.6%	9.6%	6.4%	3.0%	5.3%
Fisheries Related*	19.0%	0.9%	12.1%	9.1%	4.2%	7.5%

*Includes all employment related to category, both own-account and paid "Elementary occupations" in the sector.
*Source: Data generated from CSO 2000b, interpreted, analyzed and compiled by author

in light of the rapid expansion of the tourist industry in the GSSCMR communities and the concomitant local economic diversification.[27] Furthermore, as is occurring in Sian Ka'an, fishers in GSSCMR communities are increasingly juxtaposing fishing activities with tourism jobs. In a census conducted of Hopkins fishers in 2004, for example, 63% reported working as a recreational fisher guide, tour guide or in another tourism related job. The tourist related jobs were primarily reported as secondary or tertiary sources of income (Ibid).

Rapid tourist growth in Hopkins and on the Placencia Peninsula is clearly producing cross cutting transformations of the social and economic context of the GSSCMR communities. The focal points of tourist growth are Hopkins and the Placencia Peninsula. Tourist visitation to these communities is currently growing at a faster rate in any other area of Belize.[28] Completion of the road from Dangriga to Placencia promises to further open the area to tourists.

1.3.3 Communities of Punta de Manabique

A total population of 1754 individuals lives within the limits of the Punta de Manabique Wildlife Reserve. This population is distributed into eight small coastal villages and three terrestrial villages. There is also a relatively large community called Machquitas Chiclero located within the buffer zone of the reserve.

Economic activities that the coastal population of the reserve engages in for livelihoods include fishing, agriculture, charcoal making, caretaking for summer homes, subsistence hunting and small scale commercial activities. The most important of these activities for the coastal communities is commercial fishing. There are 228 registered fishers in the eight coastal communities which indicates a very high percentage of households within the reserve depend on fishing for part of their family income and subsistence. Furthermore, 10% of registered fishers in the reserve are women.

Table 8
Communities and Total Population within the Punta de Manabique Wildlife Refuge

Community	Location	Number of Households	Total Population	# of fishers
Cabo Tres Puntas	Coastal	71	304	69
Estero Lagarto	Coastal	18	73	16
Jaloa	Coastal	15	72	4
La Graciosa	Coastal	17	85	13
Punta de Manabique	Coastal	33	130	31
San Francisco del Mar	Coastal	59	244	50
El Quetzalito	Coastal	53	251	38
Santa Isabel	Coastal	13	59	6
Creek Grande del Mar	Terrestrial	30	173	1
Machacas del Mar	Terrestrial	31	181	0
Creek Negro del Mar	Terrestrial	32	182	0
Subtotal		372	1754	228
Machaquitas Chiclero*	Buffer zone	97	524	n/a
TOTAL		**469**	**2278**	**228**

Source: Data for 2005 community census and fisher census provided by FUNDARY.

The vast majority of fishing is small scale commercial fishing. The most important species fished for is the majúa, which is a type of anchovy that appears in massive schools off of the coast of the peninsula. Majúa fishing is seasonal with the high season being February April. The majúa and is dried and salted before being taken to market and activity that involves the whole family. Of secondary importance for most communities is fishing for lobster. The community of Cabo Tres Puntas has access to a small nearby reef for lobstering but the most important lobster fishers come from San Francisco de la Mar and dive for lobster almost exclusively within Belizean waters in the Sapodilla Cayes. Fishing for different commercial species of scaly fish takes place throughout the year but the high period is during the Lent season when demand is high for salted fish.

The primary agricultural activity is rice farming. The rice zone is located in the center of the protected area extending from Cabo Tres Puntas to San Francisco del Mar. The coastal communities practice small scale farming of crops such as plantain, yucca and corn. Most of the agriculture is for local consumption. In the Cabo Tres Puntas area fishers grow watermelon on a small scale for sale in Puerto Barrios. This watermelon is famous locally due to its taste and fetches good prices in the market.

The production of charcoal is the primary economic activity for the 13 families living in the community of Santa Isabel and is also a supplemental activity for La Graciosa and Estero Lagarto during the low season for fishing. The charcoal is produced using artisanal charcoal ovens and sold to intermediaries in Puerto Barrios. The gathering and selling of firewood is another supplementary activity in Santa Isabel in the winter months when charcoal production is difficult.

Majúa being dried in Punta de Manabique (Photo courtesy of Carlos Mechel Bay)

Numerous summer homes of wealthy individuals have been built along the coast of Punta de Manabique and caretaking of these homes is an important supplementary economic activity for many families, especially those from the community of Punta de Manabique where the heads of all but 3 or 4 families in the community work part time as caretakers. There are also some individuals who have trades in the different communities. For example, a trained mechanic lives in Estero Lagarto and a few individuals dispersed throughout the communities are involved in carpentry and rustic furniture making, mostly for sale to the local communities.

Currently tourism visitation to the protected area is very low (less than 50 individuals a month) and tourism does not constitute an important economic alternative for the communities in the protected area.

However, a number of small projects have been initiated to promote small scale ecotourism to benefit locals. A Visitors Center was built in Santa Isabel and the community has developed a short walking trail and a display for tourists explaining the charcoal making process. In Estero Lagarto a hostel is being built with the capacity to house a maximum of 6 to 10 individuals and the community can provide water tours in a nearby river in wood dories. A 50 meter long above ground nature trail has been built in Punta de Manabique. As will be discussed further in Chapter 2, the plan is to develop a tourism circuit between the three communities of Estero Lagarto, Punta de Manabique and Santa Isabel to take advantage of these resources and generate alternative income for those communities.

House in Estela Lagarto, Punta de Manabique © Matthew McPherson

1.3.4 Communities in Cayos Cochinos

Of the four protected areas in this study, the communities most profoundly affected by restrictions that have curtailed their fishing activities appear to be those adjacent to the Cayos Cochinos Natural Marine Monument. There are three villages and three fishers outposts with influence in the Cayos Cochinos Natural Marine Monument. Sambo Creek, Nueva Armenia and Rio Esteban are coastal communities in which the populations have a long history of fishing within the protected area. Each of these villages has a corresponding fishing outpost on one of the cayes within the Cayos Cochinos archipelago: Chachaguate corresponds to Nueva Armenia; East End to Rio Esteban and Bolaños to Sambo Creek. The total population of the coastal communities is 5615 people with a notable population skew in favor of females indicative of male outmigration from the community. The population in all the communities is over 60% Garifuna (Galvez 2002). Chachaguate is the only of the fishers' outposts that maintains a permanent population of any size. The caye consists of 56 densely packed households, the majority of which appear to remain occupied year round although the residents retain strong kinship and economic ties with Nueva Armenia. In contrast, only 7 families live permanently on East End and the population surges primarily during the months of March and April during the height of fishing season. Bolaños does not have a permanent resident population and the island is only occupied during fishing season.

The primary economic activities include fishing, agriculture, a wide diversity of small scale commercial activities and tourism oriented activities. Migration to the United States is very prevalent and although data is not

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available, it is likely that remittances constitute a significant source of income for many of the families in the area.

Fishing.

Fishing remains of great importance not only as an economic activity but as one of the traditional activities of the Garifuna communities. A fishers census in 2002 identified a total of 224 fishers in the three coastal and two interior communities. Nueva Armenia and Chachaguate display the majority of fishers with 106; another 70 were identified in Rio Esteban and East End and 39 were found in Sambo Creek. Chachaguate is the community that the majority of the fishers (25%) use as a landing site. The census also indicates that 73% of fishers are Garifuna and that there is continued recruitment of young people into fishing in the communities. Twenty one percent (21%) of fishers are under 25 years of age and 80% of fishers are under 50 years of age.

Table 9
Population Indicators for Communities adjacent to Cayos Cochinos

Community	Total Houses	Total Population	Males	Females	M/F ratio
Sambo Creek	745	2720	1257	1463	0.86
Nueva Armenia	338	1501	740	761	0.97
Río Esteban	404	1394	669	725	0.92
Subtotals	1487	5615	2666	2949	0.90
Chachaguate	56	150 (est)	n/a	n/a	n/a
East End	20	35 (est)	n/a	n/a	n/a
Bolaños	16	0	n/a	n/a	n/a

Source: Gálvez 2002

The different categories of fishers in the area include, in order of magnitude: independent artesanal fishers that focus on scaly fish; specialists in lobster and shrimp, the majority of whom come from Rio Esteban and Nueva Armenia and use scuba tanks to dive for lobster; and salaried artesanal fishers who work for middlemen (Galvez 2002).[29] There are also women who fish primarily in the rivers, estuaries and mangrove areas near the communities.

The commercial impact of fishing extends far beyond the fishermen, however. In all the communities there are two or more middlemen who purchase high value commercial species such as lobster, shrimp and top grade fish. These establish long term relationships with individual fishers, providing them with loans and facilitating equipment in exchange for the right to purchase the catch. Even more importantly, women traditionally act as small scale intermediaries in the purchase and local sale of second grade fish which they resell locally to individuals, restaurants and door to door in the nearby towns. Rotating credit funds were identified to provide capital to women to purchase fish, equipment and other needed supplies.

Fishers from Chachaguate, Cayos Cochinos © Matthew McPherson.

Agriculture.
In all of the coastal communities but especially Rio Esteban and Nueva Armenia there are numerous individuals, men and women, who dedicate themselves to farming. Furthermore, the Garifuna fishers traditionally supplement fishing with small scale agriculture for consumption and commercialization. In Nueva Armenia fishers will devote 5 or 6 days to fishing during the high seasons and spend one or two days in the fields growing primarily yucca, plantain and corn. The community of Rio Estevan displays a higher dependence on farming and livestock. Fishers in the community seasonally rotate agricultural activities (high season October to February) and fishing (high season March and April). Some very small scale subsistence agriculture takes place on East End. No agriculture takes place on Chachaguate due soil characteristics and lack of space.

Small scale commerce and direct employment.
Micro enterprises in the communities are dominated by women and involve a wide diversity of activities but primarily the production and sale of foodstuffs. In Rio Esteban there are 105 women who are casaba producers. Women also run restaurants and small hotels and do odd jobs such as washing clothes. A significant number of men, including fishers, obtain part time employment in construction as carpenters and masons. There are a number of artisans in the communities, both men and women, who produce handicrafts.

Tourism.
Cayos Cochinos received over 4000 visitors in 2005 and a significant number of those visitors passed through Chachaguate. Most are stop over visitors who stay for approximately 1 2 hours and three small restaurants run by women on the caye are contracted by the tour operators to provide lunch. There are also 6 very simple cabanas on the caye that can be rented to tourists, and people will abandon their homes to rent to tourists.

Outside of Chachaguate, there is very little tourism. More details are provided regarding tourism the Cayos Cochinos communities in the next Chapter that describes demand and opportunities for economic alternatives in fisher communities in the region.

CHAPTER 2

DEMAND AND OPPORTUNITIES FOR ECONOMIC ALTERNATIVES

Alternative livelihood programs have the dual goals of reducing the fishing effort and raising the economic standard of living of coastal fishing communities or individual fishers through alternative or supplemental sources of income. In the MAR region few attractive job opportunities exist in or adjacent to most of the fisher communities. The vast majority of available jobs are low paying unskilled labor opportunities that fishers may engage in at times to supplement income but hold little appeal as an alternative to fishing.

Local economies will therefore need to be diversified if alternative livelihoods programs are to have a meaningful long term impact. There are numerous opportunities in the region to tap into existing or emerging markets for goods and services. But ensuring that these opportunities are transformed into economic alternatives that appeal to current fishers and draw future generations out of fishing without rapidly undermining the sociocultural integrity of local communities will require careful planning and monitoring. New products and services will have to be developed that can generate income and employment through attention to markets and commercialization. The capacity of local communities will have to be developed to take advantage of market demand by facilitating access to capital, information and skills.

This chapter identifies opportunities for labor and enterprise development in different areas of the MAR region that could constitute potential alternatives for rural fishing communities based on existing market demand conditions. The market demand and opportunities analysis is discussed within three broad industry categories: the tourism market; the domestic market; and the export market. Under each of these categories, enterprise prospects are identified that would cater to these markets and constitute productive alternatives for fishers and their families in the rural communities in which they live. The opportunities identified serve as the foundation for the community alternative livelihoods agenda that is the subject of Chapter 4.

2.1 Demand and opportunities related to the tourism market

The growing demand for goods and services within the tourism industry clearly demonstrates the best opportunity for the promotion of economic alternatives in the region. As discussed in Chapter 1, there is a promise of increasing tourist visitation throughout the MAR region including in areas adjacent to the three TNC platform sites and Punta de Manabique. At the same time, tourism related opportunities have been little exploited in the fisher communities in many of the areas.

The following analysis is focused, however, on specific areas in which a predisposed interest from fishers is known although a broader range of alternatives were also explored. While traditional tourism employment options are numerous and varied to include such jobs as waiters, receptionists, bartenders, gardeners, and administrators, they do not appeal to established fishers who are accustomed to a seafaring, independent lifestyle. It is also often

assumed that small scale fishers are poor and thus assumed they will easily substitute fishing for other economic opportunities. However, in many areas of the MAR such as Quintana Roo, fishers probably generate earnings that are equal to or even significantly above per capita average income (IIT 2001). Job satisfaction with fishing may also be high relative to other options (Pomeroy et. al. 1997). Fishers throughout the region remain attached to the lifestyle: relative independence; working on the water; the potential for the occasional big score; and catching and growing their own food. Established fishers in the MAR region therefore do not indicate a desire to abandon fishing, expressing instead a clear preference for flexible livelihood alternatives that in contrast to full time jobs can supplement fishing and enhance their existing income.[30]

In light of these lifestyle preferences it is not surprising that in local and regional meetings carried out with fishers to determine their desires for alternative activities they consistently express a preference for tour guiding activities (e.g. MBRS 2005; Garbutt pers. comm.). Eco tour guiding can be carried out independently; it takes advantage of fishers' water and boating knowledge and skills; it can be relatively lucrative; and it displays sufficient flexibility and seasonality to be practiced in conjunction with fishing. In line with expressed fisher preferences, many international organizations in the MAR have prioritized providing fishers access to guide opportunities through training.[31] The description of supply and demand for tour guide services provided below provides a perspective on the demand potential for further guide training.

Other collateral opportunities linked to the tourism market involve the development of microenterprises to produce goods and services that cater to tourists. These include the production of handicrafts and the provision of lodging, food and beverage and transportation services. Opportunities to foment the potential for alternatives embedded in all of these activities will prove more successful if linked to comprehensive community based tourism plans with a market focus.

2.1.1 Demand for Tour Guides

Most fishers combine fishing with other complementary economic activities to generate supplementary income or subsistence products. Depending on the location, these activities include agriculture, hunting, charcoal making, businesses and trades. In recent years tour guiding has become the activity *par excelence* used by fishers to supplement their income in coastal areas of high tourist visitation such as Punta Allen, San Pedro and Hopkins/Placencia. In these same areas the labor market has responded naturally to the demand for tour guides. Throughout the region the numbers of tour guides also have been augmented by training programs provided by local tourist boards and NGOs. However, the supply and demand for tour guides in the region varies according to the destination. Existing conditions regarding the demand for the various types of tour guiding in key sites in the region are discussed below.

Sian Ka'an Biosphere Reserve and Southern Quintana Roo.
CONANP ensures that tour guide opportunities in Sian Ka'an Biosphere Reserve will benefit local communities by requiring that all tours carried out in the reserve be accompanied by a local guide. Guides must be trained and certified as "Naturalist Guides" by CONANP and SECTUR and participate in an annual course to maintain their valid certification.

Table 10
Tourism Cooperatives in Sian Ka'an Communities

Name	Location	Members	Number of Boats	Services Offered
U Voochel	Muyil	6	4	Maya lagoon tour, birdwatching, nature tour
Alux-Es	Muyil	7	4	RARE Member
Gaytanes	Punta Allen	11	10	Snorkeling/ecoadventure, wildlife observation, restaurant services
Vigia Grande	Punta Allen	46	24	Snorkeling/ecoadventure, wildlife observation, restaurant services, bikes.
Punta Allen	Punta Allen	24	24	Snorkeling/ecoadventure, wildlife observation, restaurant services
Las Boyas	Punta Allen	5	2	Fly fishing
"Lancheros de la Bahia S.C. de R.L."	Punta Herrero	21 (only 9 licensed guides)	1	Fly fishing, snorkeling, bay tours, kayaking

Currently a total of approximately 140 guides are certified to provide tours within the reserve. The majority are affiliated with one of the seven tourism cooperatives located in Punta Allen, Muyil or Punta Herrero (Table 10). These cooperatives offer different types of tours including Eco adventure (bay tour and snorkeling), scuba diving and fly fishing and vary significantly in size and membership. All of the cooperatives use a calendar to equitably distribute eco adventure and scuba tour opportunities among their members.[32] The cooperatives provide services directly to tourists or contract with local enterprises or operators from the Riviera Maya to provide tours. Recently four of the cooperatives joined together to formed a company called Community Tours Sian Ka'an with financing from RARE to compete with large tour operators.

Another ten locally owned lodges, guest houses and tour operators are also located within the reserve and offer wildlife observation, lagoon tours, and snorkeling tours. These lodges and tour operators are also the primary organizers of fly fishing tours in the reserve. Most have local guides on staff and may also contract out tours to the cooperatives in Punta Allen and Muyil. Local freelance guides also work for members of the different cooperatives and tour operators.

The cooperatives in Punta Allen and Muyil have developed a significant capacity to provide tours which currently far exceeds normal demand. In February 2006 the four cooperatives in Punta Allen reported a combined total capacity (boats, trained guides, equipment) to receive approximately 330 tourists a day for different tours. At that time, they were receiving an estimated total of 150 to 180 visitors a week representing only 6 to 8% of total capacity (Table 11).[33] The Muyil Cooperatives, with a total of 8 boats and 13 licensed guides and an average of between 6 to 27 tourists a day in 2005, also report their operations are significantly under capacity. There is less capacity and a steadier demand for fly fishing, offered by three of the Punta Allen cooperatives, due to the smaller number of qualified guides and the specialized nature of the service. Fly fishing is difficult area to break into however, as will be explained in Chapter 3.

Table 11
Capacity vs. Demand in Punta Allen Cooperatives, February 2006

Organization	Capacity		Demand		% of Capacity	
	Adventure/ Eco-tour	Fly Fishing	Adventure/ Eco-tour	Fly Fishing	Adventure/ Eco-tour	Fly Fishing
Cooperative Vigia Grande	120 tourists a day	5 boats a day	20 40 tourists a week	3 a day	2.5- 5%	60%
Gaytanes	80 tourists a day	Do not offer fly fishing	30 40 per week	n/a	5.4 - 7%	n/a
Servicio Turístico Punta Allen	120 tourists a day	5 boats a day	100 per week	3 a day	12%	60%
Las Boyas	Do not offer this type of tour	4 boats a day	n/a	3 to 4 a day	n/a	75 100%

In the south of Sian Ka'an, the Punta Herrero tourism cooperative reported an inability to meet current demand for tours. The cooperative, which has nine certified guides, receives very small groups for kayaking from the Maya Beach Garden Hotel in Mahahual on an almost daily basis from July to September. The capacity to provide tours is limited by the lack of equipment. The cooperative only has two double and two single kayaks limiting tour sizes to groups of 6 or less. Furthermore, the cooperative only has one 25 foot long skiff for certified to use for eco adventure (snorkeling) and bay tours, which can be used to provide tours to up to 6 people a day. The cooperative does not have a boat to use to provide fly fishing tours. Occasionally they have had to turn away large groups due to lack of boats or kayaks.[34]

Further south in Quintana Roo along the area marketed as the Costa Maya, the recent explosive growth of cruise ship arrivals in Majahual has resulted in a still unmet demand for services to attend to the cruise ship tourists. Xcalac, which is a fishing community and point of departure to the Banco de Chinchorro, a haven for scuba divers, also has a tourism cooperative with trained guides that is floundering due to lack of visitation to the community (Merediz pers. comm.). This could quickly change however as a result of the ongoing growth of cruise ship visitation and plans for Costa Maya.

GSSCMR and Southern Belize[35].
There are approximately 280 certified tour guides in the communities surrounding GSSCMR in Belize which includes Hopkins and Placencia, two communities of relatively high tourism visitation. All tour guides must be licensed by the Belize Tourism Bureau though a local tour guides association.[36] In order to receive their license they must take a course that lasts approximately six weeks and can cost up to $600 US.

A census of tour operators conducted for purposes of this consultancy provides detailed information on the demand for guides in the Placencia Peninsula and Hopkins village (Appendix II). The census identified 41 resorts and independent tour operators on the Peninsula that provide tours. Fifty four percent (54%) of these operators are Belizean born and forty four percent (44%) are foreign. Eighty five percent (85%) of the operators actually organize tours while 15% of the operators in the census only act as intermediaries between tourists and organizers.[37] Eighty two percent (82%) of the organizers have one or more guides on staff and the other eighteen percent (18%) rely exclusively on hiring freelance tour guides. However, eighty eight percent (88%) of all tour organizers hire freelance tour guides within their normal operations.

Table 12
Overall Demand for Tour Guide Services on the Placencia Province

Specialization	Total on staff	Additional hires per week high season	Additional hires per week low season
Dive guides/instructors	36	55	19
Dive assistants	16	42	12
Sport and fly fishers	23	64	24
Others	48	88	28
TOTALS	123	249	83

There are 123 guides on the staffs of resorts or tour operators with 29% consisting of dive guides or instructors, 13% dive assistants, 19% fly fishers and 39% "others" including nature guides, birders, and kayakers (Table 12). The highest weekly demand for freelance guides occurs in the tourism high season from November to June when there is an estimated weekly demand for an additional 100 120 full and part time guides. In combination with guides on staff the demand during high season represents approximately 75% 85% of available certified tour guides on the Peninsula. Approximately ninety nine percent (99%) of all guides are Belizean and most are locals (Romero pers. comm.).

In light of continued growth of tourism on the peninsula it is likely that overall demand for tour guides in the area will continue to grow.[38] The census unveiled a demand on the Placencia Peninsula for guides with specific skills as well as more specialized training and certification programs in different areas of expertise. These include:

- Guides with training in birding (the most frequently mentioned need).
- A need for additional certified divemasters.
- A need to enhance skills of guides in customer service and relations.
- A need for additional expertise in jungle flora and interpretation of marine life.
- A need for expertise in interpretation of Mayan ruins
- A need for more expertise in marine operations/ sailing
- A need for safety training (wilderness emergency medicine; boat safety)

The demand for guides in the Toledo area and Southern Belize differs significantly from the GSSCMR area. In those areas the number of available guides vastly outweighs available work opportunities. Tourist visitation is low and the majority of tourists are in transit to or from Guatemala and do not stop to take tours. Informants reported that in the Punta Gorda area, there are approximately 12 15 individuals that make a good living as tour guides. Most of these guides have strong connections to the El Pescador Punta Gorda resort. These are former fishers who provide fly fishing tours for the resorts and also provide other freelance or resort based guide services such as charter trips to the Sapodilla Cayes and snorkeling. This group of now experienced and well equipped guides reportedly monopolizes the demand for guides in the Punta Gorda area.

Due to the amount of guide training conducted in anticipation of growing tourism demand in the future, there is significant overcapacity of available tour guide services in the Punta Gorda area (see Chapter 3). Jobs could perhaps be found in Placencia or Belize City but most trained guides have been unwilling to abandon their homes in Toledo district for relatively low paying guide jobs in other areas of Belize (Garbutt pers. comm.).

Amatique Bay and Punta de Manabique.

Reliable information is not available regarding the total number of individuals working as tour guides in the Amatique Bay area. Hotels in Puerto Barrios cater primarily to national visitors and guide activities revolve primarily around the cruise ship tourists. The recently formed Puerto Barrios Tour Guides Association has 35 members, many of whom are bilingual professionals licensed by INGUAT.[39] The tour guide association reports that all of their guides work regularly during the cruise ship season (October to April) and that due to ongoing growth of cruise arrivals there is a shortage of qualified guides to provide tours. The Amatique Bay Resort also located near Puerto Barrios has four professional guides on staff. [40]

Livingston, Guatemala © Matthew McPherson

The town of Livingston is the traditional tourist attraction in the Amatique Bay area and receives 3000 5000 tourists a month, mainly a low budget backpacker crowd with an average length of stay of two or three days. The primary attractions are the nearby Rio Dulce canyon, the Playa Blanco and Siete Altares and the Caribbean style partying ambience of the village. The town has a recently formed tourism committee but there is no professional guides association. Tour guiding is provided by boat captains on trips to Rio Dulce or by informal guides who peddle their services to tourists in the street. Higher income tourists generally come with an agency accompanied by professional guides from Guatemala City.

In the Livingston municipality, FUNDAECO has reportedly been involved in training guides for tours of the Cerro San Gil located to the south of the town and the Rio Sarstún to the west, but information was not available regarding total numbers. TIDE also provided training to 12 guides in fly fishing and to 6 divers from unspecified communities in the Amatique Bay area.

In the Punta de Manabique Wildlife Refuge, FUNDARY has trained 24 individuals in guiding and services to provide nature and river tours in the small villages of Punta de Manabique, Estero Lagarto and Santa Isabel. The village development councils (COCODES) also are being prepared to function as local tourist associations with rolls to distribute tours among available guides. Currently there is virtually no demand for these services. Other than during Holy Week, when visitation consists primarily of locals bathing on the beach, the Punta de Manabique communities only receive 4 or 5 visitors a month. Amatique Bay Resort takes approximately 10 tourists a week to Punta de Manabique to view the elevated nature trail but these are accompanied by the resort's own guides.

Eco tourism and cultural tourism is more developed in the interior areas along Rio Dulce and Lake Izabal where there are Maya communities and established nature trails and local nature guides, birders, and archaeology guides. The offering for marine based tourism activities has not been developed in the Amatique Bay area. No local dive shops operate in the area and the few divers that visit come from diving schools in Guatemala City and generally go to the cayes in Belize since no diving sites have been developed in the bay. Fly fishing is also not promoted by any tour operators in the region although there are occasional requests for sport and fly fishing tours.[41]

Cayos Cochinos Natural Marine Monumen. The focal point of tourist visitation is the Cayos Cochinos protected area which received over 4000 visitors in 2005. Approximately 5 to 10 individuals from the communities within and adjacent to the Cayos Cochinos protected area work as tour guides with some regularity. Otherwise, little formal local guide capacity has been developed in the communities within and adjacent to the protected area. In Nueva Armenia there are three guides certified in a 30 day training program provided by Hotel Escuela Madrid through the Honduran Tourism Institute. In Rio Esteban there is only one individual who occasionally works as a guide. There is reportedly one locally trained divemaster from Chachaguate who works with HCRF and in Rio Sambo there are a small number of bilingual guides who work with the local tourism operator. TIDE provided training to 4 individuals from the communities but none of these are working as guides.

Almost all tours to Cayos Cochinos are provided by external tour operators such as Garifuna Tours, Coco Tours and the Plantation Resort that come from La Ceiba and Tela. The organizers bring their own guides and divemasters. The tour operator who takes the most visitors to the area is a local fisher from Sambo Creek who receives business through referrals and also provides services for the Hotel Palma Real, Hotel Helen, and Hotel Canaria. He regularly hires one or two local bilingual guides and local boat captains, has 4 boats of his own and at times contracts for more boats in La Ceiba.

Most tour groups stop over in Chachaguate to explore the caye and eat lunch in one of the three small restaurants on the beach before heading back to the mainland. There are no organized experiences for tourists on the island. Furthermore most visitors to Cayos Cochinos depart from either Sambo Creek or Nueva Armenia but the communities have not been able to capture benefits from these passers by. In the coastal communities, tourists are very irregular, consisting primarily of locals who visit during the annual Garifuna celebrations and Holy Week. Recently HCRF initiated a strategy to channel tourism benefits into Nueva Armenia by requiring that all students involved in the Operation Wallacea scientific tourism program stay overnight in the village before departing to the Scientific Station in the Cayes. This could prove to be of significant benefit the community. Channeling income of groups of 40 to 50 students a week into the village can serve as a stimulus for the community to organize and provide the necessary services for their student clientele. This experience could then serve as the foundation for other community based tourism initiatives in the area.

Tourists on Chachaguate, Cayos Cochinos

2.1.2 Demand for Collateral Offerings for the Tourist Market

The tourism cooperatives and fishing villages report an unfulfilled demand for collateral goods and services that can be offered to tourists in villages. These include locally produced handicrafts and souvenirs, food and beverage, lodging, transportation and cultural experiences.

Involvement in activities other than guiding often holds more appeal to women as economic alternatives than men. Although there are some female fishers in the region, males typically dominate the capture fisheries and are the primary at sea laborers. Tourism has clearly provided the foundation for increasing women's involvement in the local economy in the communities where there is significant visitation such as Punta Allen, Hopkins and Placencia. In Punta Allen women are involved in administrative duties in the cooperatives, work as waitresses and cooks and managers in the restaurants, are housekeepers of guesthouses, and own small convenience stores and cafeterias. In Hopkins women are the primary managers of the numerous small guesthouses and restaurants that have sprung up in recent years. Informants in the region also commented that home based productive activities (guest houses, handicrafts, small restaurants near their houses) are attractive for women because they do not interfere with traditional household responsibilities.

Due to the fact that handicrafts and services may appeal more to females there is less likelihood that occupational shifts from fishing will occur as a result of these activities. However, alternatives that target women still hold much importance for raising the economic standard of living of coastal fishing communities or individual fishers, through supplemental and increased incomes and greater economic diversification of the communities.

Handicrafts.
Handicrafts production could provide a part time alternative for men and women to generate spare cash and potentially evolve into a full time activity for some households. The tourism cooperatives and associations in Mexico and Belize report a demand for handicrafts and souvenirs and there are skilled artisans present in many of the coastal villages of the MAR region. The key to converting handicrafts production into a viable alternative involves the development of marketing and commercialization strategies around traditional or unique products. One promising strategy would involve the production of handicrafts strategies for specific tourist destinations such as villages or protected areas. These constitute natural niche markets for souvenirs and the products could be sold at strategic locations near the visitation sites (Palacio and Jones 2005).

Sian Ka'an: In Quintana Roo traditional handicrafts production is concentrated in the Maya villages in the interior of the state as opposed to the coastal areas.[42] In coastal Punta Allen the tourism cooperatives do not have any handicrafts, local products or souvenirs available to sell to tourists despite receiving 10,000 or more visitors a year. Cooperative members indicate that this is an unmet market need and express great interest in the possibility of home production of souvenirs with local sea resources such as Sargasso, seashells and driftwood and other materials such as *papier-mâché* and pottery and textiles. They report that there is much interest but no prepared artisans in the community for this work.

The Maya women of Muyil traditionally make hammocks and elaborately embroidered *hipiles* (Maya dresses). They have also received training in sewing and embroidery of modern style clothing and non traditional images from a government project. The women sell their crafts on the side of the road near the entrance to the reserve and also take products to the market in Tulum but there is no information available regarding sales volumes or the economic importance of this activity in the community. In Punta Herrero, the fishers interviewed expressed an interest in fly tying to produce specialized flies to sell to fly fishers. In the south, communities such as Xcalac reportedly produce handicrafts out of shells and other materials.

Belize The majority of handicrafts sold in Belize are Maya style handicrafts produced by locally based Maya artisans or imported from other areas in Central America. There are also Garifuna or Creole artisans in the coastal fisher villages such as Hopkins, Placencia and Monkey River with the capacity for the production of handicrafts with wood, shells and other products. Local handicrafts viewed for sale in GSSCMR communities include drums, crude Maya carvings, bowls, walking sticks and other wood carvings and products, and necklaces and earrings made with shells. These items are sold in Placencia and in Hopkins by itinerant salesmen, on street stands, craft shops and in hotels and resorts and both men and women are involved in their production. Other handicrafts include traditional Garifuna dolls made in Barranco and Placencia, slate carvings, fish hangings made from dried coconut fronds, and numerous other items.[43]

Amatique Bay/Punta de Manabique: In Guatemala there is a long tradition of Maya artisan work and the markets in Livingston and Puerto Barrios are flooded with handicrafts from around the country. In Punta de Manabique, however, no tradition of handicrafts production was identified. Demand for unique local souvenirs could be stimulated if there is an increase of tourism visitation to the protected area communities.

Cayos Cochinos: Tourism in Cayos Cochinos provides a ready made small scale niche market for the sale of souvenirs and handicrafts to visitors to Chachaguate and to students and researchers that participate in the Operation Wallacea project. Furthermore the Garifuna communities display much capacity to produce a wide variety of handicrafts. A number of artisans were identified in the Cayos Cochinos communities that make handicrafts using locally found materials. In Nueva Armenia products identified include: wood carvings and ash trays; baskets and figures made from rattan; shined conch shells, pottery figurines; necklaces, bracelets and pendants made of hawksbill turtle shells, black coral, coconut shells, corozo seeds, wood and shells. Most of these are sold informally on the beach to tourists in Chachaguate. In Rio Esteban there are also artisans who make jewelry, belts, seine nets and hammocks, straw hats and a specialist who makes Garifuna drums and other wood carvings. Other local items that could potentially be marketed to tourists include prepared bottles of *gifiti* (with or without spirits), a spiced rum marinated in a bottle with local herbs, bark and spices.[44]

Informants indicate that the sale of Garifuna handicrafts to tourists can produce relatively good income. For example, a female vendor interviewed on Chachaguate reported sales of 10 or more items of jewelry a day at US$5.00 to $10.00 an item. The drum maker in Rio Esteban reported high demand for his drums which sell for over US$200 a pair. In Nueva Armenia the community has recently formed an Artisans Committee to organize sales to the Operation Wallacea students. Although efforts need to be made to find suitable replacements for the use of CITES listed materials, besides local sales there may be an opportunity and to expand the distribution of these goods perhaps to La Ceiba, Tela or the Bay Islands.

Fisher/artisan in Nueva Armenia, Cayos Cochinos © Matthew McPherson

Ecolodges, Food and Beverage Services, Transportation and Cultural Activities.
The proliferation of small guesthouses and restaurants in communities such as Hopkins and Placencia shows how tourism can begin to provide opportunities for the establishment of services that cater to tourists.[45] In Punta Allen each of the cooperatives has a restaurant. These establishments are managed primarily by women. There are numerous small restaurants in Hopkins village run by women who often hang a certificate on the wall received from having participated in state sponsored training programs in food and beverage services. On tiny Chachaguate there are 6 private cabanas for rental to tourists and there are three restaurants run by women on the beach.

Communities such as Punta Allen, Punta Herrero, Monkey River and Rio Esteban express a need for ecolodges or guesthouses to draw visitors to the communities. An eco lodge is currently being built in Estela Lagarto in Punta de Manabique with the support of FUNDARY and cabins for fly fishers are also being built near Monkey River with private financing. There is a proposal to build a small ecolodge and restaurant on the beach in East End so tourists can reside in Cayos Cochinos. However, although the perception in many of these communities is that the lack of adequate lodging is the missing ingredient to attract more visitors and diversify their offering of services to tourists, hotels and guesthouses clearly do not draw tourists without a more comprehensive tourism marketing strategy. Abandoned ecolodges and cabins were found in Punta de Manabique and Rio Esteban and in other areas guesthouses are being underutilized. Ecolodge or guesthouse programs can clearly be important to expand visitation to communities. But independent of a broader community based tourism strategy to market and draw tourists, there are high risks of failure.

Ecolodge in Estela Lagarto, Punta de Manabique. © Matthew McPherson

Potential demand also exists for small enterprises designed to offer cultural experiences to students. Garifuna entrepreneurs in Hopkins offer drumming classes, cultural performances (drumming and dance) and traditional medicinal services for tourists and in Honduras they have a traditional dance group that performs for tourist groups. Santa Isabel has developed a program to demonstrate charcoal making. The Garifuna, Creole, ladino, mestizo and Maya communities in the region all have cultural and economic activities such as the making tortillas and casaba bread, dance classes, artisan activities, and others that could be identified in conjunction with communities to be transformed into small enterprises targeting tourists.

Finally there are some indications that a growing need for water transportation services targeted at both the local market and tourists may constitute an alternative for fishers. In Puerto Barrios, for example, a number of former fishers now work within the lancheros (skiff driver) association that provides services for cruise ship visitors and transportation to Livingston and other areas. Santa Isabel has received funding to establish a daily boat service to Puerto Barrios for villages in Punta de Manabique. Punta Negra and Monkey River reported the need for community managed transportation systems for local use. Across the region as well, tour operators report a need for boat captains with improved skills in water safety and basic seamanship and captain's licenses.

Announcement of drumming classes targeted to tourists, Hopkins Village, Belize © Matthew McPherson

2.1.3 Tourism-Based Alternative Livelihood Opportunities

The tourism industry remains the fastest growing economic driver in the region and, therefore, is expected to continue to provide the most lucrative and immediate livelihood opportunities for fishers. However, as the analysis above suggests, these opportunities are not equally distributed across the region due to corresponding discrepancies in the levels of tourism development and quality of experience offered by each area that determines the variations in levels of visitation received by the different destinations. While certain areas have a need for additional guides, overall, in most of the MAR coastal region there are more guides available than the demand for their services. Many trained and certified guides either are not working or only working on a very irregular basis. As such, a single strategy approach for taking advantage of tourism based opportunities across the region is not applicable. Rather, it is recommended that a tailored approach, in combination with other alternatives discussed in Chapter 4, be considered on the basis of individual sites. In addition, existing opportunities for livelihood alternatives for fishers in the tourism sector are limited based on current conditions. Therefore, limiting factors need to be considered to better understand the economic potential of the opportunities.

Specialized Tour Guiding .
The transition from fishing into tour guiding appears to be the most successful thus far. To capitalize on these successes, the livelihoods approach must now respond to the demand for guides with higher levels of specialization and experience. In Guatemala and Mexico there is a demand for bilingual guides as in Majahual, Puerto Barrios and Belize City to lead cruise ship tours. The cooperatives in Muyil require archeological certification so they can expand their current offering by leading tours in Tulum. In the Placencia area there is a demand for divemasters and dive instructors, birding

specialists, more highly specialized nature guides and archeological guides. There may also be a demand for divemasters and instructors in northern Belize and the Bay Islands.

Limitation: Willingness of labor supply to relocate to where the demand is. Although there maybe a surplus of well trained tour guides in one area and a shortage of the same expertise in another, it does not necessarily correspond to an automatic equilibrium of talent distribution. A better understanding of the adversity to relocation will help identify ways to alleviate this challenge. In some cases, resort owners (demand) may not be able to reach qualified tour guides (supply) and the simple provision of a venue to advertise jobs more widely, such as a Tour Guide Bulletin, can mitigate this lack of communication. In other cases, various incentives such as higher pay scale, housing benefits, family visitations etc. may have to be explored in order to motivate movement into areas of higher demand.

Fly fish Lure Production.
Fly fishing lures are very specialized, often tailored towards specific species and difficult to make. Good lures (design has high success rate) are highly prized by serious fly fishers and can be a novelty item for which fishers are willing to pay a lucrative price. Fly fish guides in the region can capitalize on the growth of the industry by producing good quality flys that they can market during their own expeditions or through tour associations and cooperative, marine supply stores and tour operators who offer fly fishing services. Although fly fish lure making may not constitute a full alternative to fishing, it is highly compatible with the fishing culture and can be an effective transition into retirement by older fishers.

Limitations: The creation of fly fishing lures requires highly developed skills in both design and production. This usually comes from direct experience in fly fishing and an in depth understanding of the sport. Although lures are generally very expensive, and the willingness to pay by avid fly fishers is high, the materials necessary to make quality flies may be cost prohibitive. However, the potential for innovation by using local materials is also a possibility.

Community and Cultural Tours.
Ecotourism, which features adventure and culture based experiences, is the fastest growing section of the tourism industry. The cultural diversity and the strong community orientation in the region provide an excellent foundation for the development of community based cultural tours designed to provide the ecotourist with a glimpse of the traditional lifestyle. For example, Monkey River in Belize has developed basic infrastructure in the community to accommodate short term tourist visits. Tour guides who are often from the community then provide an overview of the small fishing village, its history and traditions based on fishing during a walk through the village. The same potential may exist for Nueva Armenia and Chachaguate in Cayos Cochinos which would require the training of two or three local guides as well as coordination with tour operators. As is being attempted in Cayos Cochinos, community and cultural tours can also be linked to scientific tourism activities for students and researchers in the protected areas.

Developing guest house programs and ecolodges provides an opportunity to augment numbers and length of visitation in local communities, thereby increasing the "ripple effect" and diversification of employment and services targeted towards tourists such as food and beverage, cultural exchanges, transportation and others and thereby channeling more tourism revenues into communities.

Limitation: This opportunity is dependent upon the presence or development of unique community features or experiences known to be of interest to tourists. It also requires a high level of community wide organization to ensure the agreement and participation of residents. Tours must be well structured and designed to maintain the client's interest and a scheme for the distribution or use of the profits must be transparent and in place.

Artesanal Craftmaking

There are skilled artisans in many of the MAR coastal villages, especially the Garifuna communities, and the potential to expand the niche based market is great. This would require not only the provision of training to generate goods but also stimulating the demand through the establishment of craft centers or stalls around MPA facilities and in strategic points along regular tour circuits, in cruise ship ports and other strategic locations (Silvio et. al 2000; Dudenhoffer pers. comm.). In some cases, in may be possible to generate unique products that can be identified with a specific community as with a trademark or a cultural heritage symbol. Capitalizing on these existing traditions is a good way of stimulating cultural interest but also of maintaining cultural identity.

Limitation: Handicraft production requires the development of highly skilled craftsmen and women to generate products of high quality and adequate quantity. Although there are fishers in the region with trade skills that could transition into artesanal craftmaking, in most coastal areas there is not a long and well established tradition of commercial craftmaking such as the one that is found amongst the Mayans in the interior regions. Local capacity and the degree of interest of fishers in participating in this activity will need to be assessed.

2.2 Opportunities and demand linked to domestic markets

Possibilities exist to tap into domestic market opportunities through enhancing the existing skills of fishers in different trades, promoting the development of small businesses, enhancing local business development and management skills and adding value to products for improved profits in local markets. Activities should focus on existing local capacity and creativity to diversify local economies and income sources. For these initiatives to be successful, planning should take place via a bottom up approach in communities. Further research will also be needed to understand the technical and financial viability of potential value added enterprises. Fomenting microenterprise activities will require identifying specific conditionalities for successful business development that are discussed more thoroughly in Chapter 4.

2.2.1 Trades: Enhancing existing skills

Fishers and their households demonstrate high levels of occupational multiplicity in most of the rural coastal villages in the MAR region. In Hopkins, Belize a recent fishers census showed that 83% of fishers were engaged in non fishing activities and 63% were involved in three or more different activities (primarily construction and tourism). Furthermore, 66% of fishers surveyed reported specialization in a trade, primarily carpentry and masonry (McPherson 2005).

A similar pattern exists throughout the MAR region. In Punta Allen, Ambergris Caye, and Placencia, lobster fishers combine fishing activities with tourism (Solares Leal and Alvarez Gil 2003, Pomeroy and Goetze 2003; Majil pers. comm.). In Punta de Manabique, fishers also farm, produce charcoal, and work as caretakers in summer homes of the wealthy located in the protected area. In Nueva Armenia and Rio Esteban, fishers are highly reliant on farming for subsistence and local sales and to a lesser extent livestock, carpentry, handicrafts and a diversity of other activities.

One opportunity to increase the ability of fishers with existing skills to earn greater income would be by enhancing their existing non fishing skills. The primary opportunities for consideration include carpentry/furniture making and engine/boat repair.

Carpentry/Furniture Making.

Interviews and data indicate that carpentry is a trade that may be of some interest to fishers across the MAR region. The potential may exist to provide further specialized training to existing carpenters to enhance their ability to generate alternative income through the use of their skills. If appropriately equipped

and trained, carpenters could also use local sustainably harvested materials and tap into domestic markets for house construction and repair and furniture.

Indicators of potential interest and demand for this trade include the fact that in Hopkins village approximately 30% of fishers reported carpentry related activities as an alternative income source. Informants also report the presence of a small number of carpenter/fishers in Placencia and Monkey River. Past surveys in the Gulf of Honduras area also indicate that 2% of fishers in Southern Belize and Guatemala and 4% in Honduras report carpentry work as a supplementary economic activity (Heyman and Graham 2000b). However, it is likely that many more fishers than reflected by these low percentages have experience through working on boats, building and repairing their houses and fashioning crude furniture for their households. Fishers in the community of Santa Isabel in Punta de Manabique expressed interest in the sustainable harvesting of timber as well as non timber forest products for the construction of rustic furniture and other products to sell locally and in Punta de Manabique this option was suggested by some fishers an alternative to both fishing and charcoal making.[46]

Other construction related trades in which there may be interest include masonry, another trade that appears to be practiced by many fishers throughout the region. In poorer fisher communities such as Nueva Armenia, a skilled mason reportedly can receive approximately the same daily income as a fisher. Another trade which could be of interest to fishers in some areas is welding and metal work.

Engine and boat repair (fiberglass work).
In the most recent consultation carried out by MBRS with fishers regarding livelihood alternatives, engine and boat repair was ranked as fourth in terms of overall priorities and was also the first non tourist guide alternative identified by participants. Consideration should, therefore, be provided to the possibilities for addressing this perceived opportunity.

Insufficient information is available to measure the demand and economic viability of these activities from a local or regional perspective but some general observations can be made. First of all, engine and boat repair skills may have broad appeal to fishers but in the small communities demand will likely be insufficient to translate these skills into a viable economic alternative for more than a small number of individuals. In the towns, an experienced mechanic can garner a relatively decent wage in comparison to other opportunities but it may not be enough of an incentive to draw fishers out of their fishing communities into town.[2] Engine repair and skilled fiberglass work is highly also valued and well remunerated by recreational boaters and therefore training may be more successful for fishers in larger towns and especially areas where there are marinas like Livingston, San Pedro, Placencia and Roatan.

Maria's Place (restaurant) owner, Hopkins. © Matthew McPherson

2 For example, in Independence Belize a mechanic reportedly earns the equivalent of US$20 25 a day depending on their skill level. In comparison, a divemaster earns US$50 a day plus tips. In Placencia, carpenters who are contractors can earn up to US$40 a day. In Guatemala an experienced mechanic similarly can earn up to US$20 a day. In comparison, depending on prevailing prices a majúa fishermen can bring anywhere from US$60 to US$300 in a single day.

2.2.2 Small Businesses, Cooperatives and Value-Added Opportunities

Many fishers in the MAR region supplement their incomes through running small local businesses. Heyman and Graham (2000a c) reported that 6% of fishers in Southern Belize, 4% in Guatemala, and 6% in Honduras reported small business ownership as supplementary economic activity. In the 2004 Hopkins census, 27% of fishers reported owning a business (McPherson 2005). Women are also very involved in micro entrepreneurial ventures throughout the region.

The demand clearly exists in fisher communities for improved capacity in business related skills for the creation, administration and management of private and cooperative entrepreneurial ventures. Opportunities also exist to enhance existing ventures through improved planning and marketing and to foment value added enterprises for farmers and fishers.

Demand for General Small Business Training. Throughout the MAR region fishers and local community association representatives frequently express the need to improve the performance of cooperatives, tourism oriented businesses, and local small businesses and also discuss unfulfilled ideas for new enterprises to produce goods and services for the local market. Similarly, in the recent MBRS fisher consultation, another need identified by participants involved increased local capacity in areas such as management, cooperatives, marketing, financial planning and tax and business regulations. A recent alternative livelihoods assessment carried out in Monkey River, Punta Negra, and Punta Gorda also highlighted the need for support for small business development (King 2005).

Women are particularly active in non tourism microenterprise activities throughout the region and especially in Garifuna communities surrounding Cayos Cochinos. In those communities, for example, women are the primary local marketers of fish and a successful rotating credit fund exists to supports that activity. They also run small general stores and produce pastries and sweets such as coconut bread (*pan de coco*). Sweets and fish are sold door to door in nearby communities and in the local markets. Other small business opportunities that are frequently mentioned include sewing shops (to make and mend clothing), pastry shops, and t shirt production. However, an example of the low level of capacity for small business management includes a finding by Peace Corps volunteers in Nueva Armenia that local pan de coco producers had priced their product so low to be competitive in the market that they were actually losing money from this activity. This went unobserved by the producers because they failed to take into account indirect costs such as transportation when gauging their profits.

Some effort has been devoted to generating microenterprise skills in the region. For example, small business management was included as part of MBRS and TIDE UNDP training programs. In Guatemala, the PROGAL project has extensive experience in financing productive projects through a community based approach. In the communities surrounding Cayos Cochinos the InterAmerican Foundation also provided HCRF with funds to provide training and seed money for the formation of micro enterprises which have received little ongoing support.[47] Many local small business projects have not demonstrated high levels of success due to factors including low profit margins and conflicts between partners and proved to be a source of frustration for local NGOs. But with the exception of the PROGAL project which provides ongoing support and is slowly showing some success, most other small enterprise projects do not appear to have included systematic follow up, credit options or ongoing assistance.

Improved Pricing and Value Added.
A number of projects and proposals exist in the region that provide ideas regarding opportunities to support enhanced income through value added to existing products including improved storage to maximize price at time of sale, direct marketing and processing. These include the following:

Value Added to Fish Products. The women in San Francisco de la Mar are traditional producers of dried salted fish (*seco salado*) and are now trying to extend value added to fish products through the introduction of new products including fish chorizo and sausage, fish ham, smoked snook (robalo), and fish preserves. Production is carried out in a local processing plant and fish are purchased from local fishers and stored in a solar refrigerator. A market study was contracted and they will soon open a stall in the Puerto Barrios market to sell the products.[48] Although there are still numerous challenges to be overcome, this project could serve as a model to be replicated in other areas if successful.

In Livingston, the local Shrimp Fishers Association has partnered with a regional fishers network (*Red de Pescadores*) to set up a service center for fishers. They have received support from an Italian donor (CISP) to build a Service Center with cold rooms, freezers and processing areas. The objective of the project is to break the dominance of local intermediaries over fish purchases through purchases and storage, and to add value to shrimp and fish through processing.

Both of these are interesting initiatives designed to enhance income by addressing the low value that fishers receive for their product. Nevertheless, a notable feature of these projects is *that market feasibility studies have been contracted only after the projects were financed and moving forward.* This reflects a chronic problem throughout the region: investment in and initiation of projects *before* the carrying out of market studies and development of a business design.

There is a clear interest and perhaps an opportunity to foment enhanced value of fish products in the region through, for example, producing smoked fish or selling fillets or other designer fish products for the tourism market. It is recommended that marketing studies should be conducted to identify the right alternatives and better understand the demand and income potential for value added fish products. Any such initiatives should also require environmental impact assessments.

Members of Centro Mar, Punta de Manabique
(photo courtesy of Carlos Mechel Bay)

Value Added to Charcoal. Households in the community of Santa Isabel, Punta de Manabique depend primarily on charcoal production for their livelihoods which is a laborious, low income activity. However, during slow seasons for fishing in the region, many other communities in Punta de Manabique and nearby areas also begin to produce charcoal saturating the market and provoking a severe decline in market prices.[49]

Furthermore, they are only selling their charcoal for a very small fraction of the price that charcoal sells for in the stores in Puerto Barrios. For that reason, they propose forming a local Charcoal Association and doing their own sorting and packaging to control the price of sale and circumvent the intermediaries.[50] There are some regulatory hurdles that would have to be overcome as well as a guarantee of sustainable harvesting for such an initiative to be implemented.

Employment in Conservation Initiatives. An emerging demand exists for the assistance of fishers in the monitoring of reef resources, protection of MPAs, and perhaps the rehabilitation of mangroves and other coastal resources. Training to date appears to have focused primarily on training local individuals to work as volunteer park guards and reef monitors although there have been some reported hires of fishers in paid guard and monitoring positions. There should be continued focus on expanding opportunities to provide local fishers the skills necessary to acquire remunerative positions as research assistants, reserve personnel, and other positions related to resource conservation and rehabilitation of ecological resources in the region.

Mangrove Honey. Honey reportedly has a high demand in markets throughout the Central America and apiculture is a popular sustainable alternative supported by numerous projects in the region. Hives set by black mangroves during bloom produce a very high quality honey which is produced in Florida and in some areas of Asia. The viability of this potential alternative would have to be explored in coastal areas in the proximity of primarily freshwater mangroves in the region. Fishers would also have to be consulted regarding interest in engaging in the activity.

Aquaculture.
Numerous reports and interviews indicate that fishers would like to be involved in aquaculture activities. In Punta de Manabique fishers have experimented with aquaculture to reproduce snook and they also have developed a local technique to preserve lobster at sea to enhance value through the sale of live lobster to local summer home owners. However, only one small scale aquaculture project was identified in the region, in Punta de Manabique, which is in its initial stages. Furthermore, experts consulted regarding the viability of coastal aquaculture emphasized that this activity is expensive to set up, environmentally delicate, and requires a high level of expertise to be successful. For that reason careful consideration to these issues will be required before initiating any coastal aquaculture projects in the region. Exploratory alternatives could also include ventures such as coral reef farming and mangrove oyster production, an option that has been promoted in Jamaica (e.g. Borneman 2000; Whitford 2000; Aiken et. al 2002).

Fisher/charcoal maker from Santa Isabel, Punta de Manabique

2.2.3 Summary of Domestic Market Opportunities

It will be far easier to increase incomes and diversify local economic opportunities by enhancing existing skills and activities than through the introduction of unfamiliar alternatives or develop local markets for completely new and unfamiliar products. Furthermore, economic diversification will require initiating new entrepreneurial opportunities in the fishing villages of the region.

Enhancement of Skilled Trades.
Fisher participation in skilled trades could be enhanced in areas such as carpentry and masonry and engine and boat repair. Specialized training in different forms of carpentry (i.e. construction, furniture, detailing) could be carried out to improve or develop new skill sets among trainees. Similarly, mechanic skills can be enhanced through additional training on different engines due to the fact that working with the recreational boater market would require a high degree of specialization. However, the most salient need will likely be for capital with which to acquire proper equipment and construction of appropriate workspaces to enable a functional work environment. With the boom in development along the MAR coast as well as the annual destruction conferred by hurricanes, the need for skilled carpenters and masons will be a good source of employment. Similarly, the numbers of recreational and fishing boats that require regular maintenance throughout the region can provide a steady stream of work. It is recommended that fishers in different communities be consulted to gauge interest in these areas before planning training programs.

Limitations: Due to the highly specialized skills required by these trades, not all fishers will be interested in pursuing this line of work. Moreover, it is unlikely that all of those who are interested will be able to completely transition out of fishing due to fluctuations in demand tied in with seasonality. Another important issue involves the fact that working with engines and fiberglass requires workshops and equipment to avoid environmental contamination and health risks. Engine repair requires appropriately designed cement flooring to avoid oil contamination and systems in place for the appropriate disposal of oil, batteries and discarded parts. Fiberglass work, which uses resins and other materials, can release toxic air pollutants and if not handled appropriately can cause skin irritation and pose other health risks. Training in rural communities would have to be accompanied with measures for the construction of appropriate workshops, capital to purchase tools and safety equipment and the establishment of disposal procedures for dangerous byproducts.

Small Enterprise Development.
The intrinsic diversification of occupations within communities in the region provides a broad set of opportunities depending on conditions in local markets. In capitalizing on this natural inclination, businesses can be developed together with the community as a whole, groups or individuals that respond to specific needs in the community be it a bakery, an establishment to provide tourism services, or in the production of specialty goods. There is a clear demand overall however for improved small enterprise development capacity in the communities. This could be achieved through carrying out business development workshops for male and female microenterprise owners and budding entrepreneurs either in local communities or in strategic locations within the region. The workshops should both provide training in business planning, marketing , financing and long term management as well as have a practical goal in mind: all participants will complete the program with viable business plans in hand to either enhance their existing enterprises or create new alternative businesses in their communities. The training should be conducted by individuals who have significant hands on experience as small business entrepreneurs. The development of business ventures may also be reliant on the development of value added products and their potential market.

Limitations: Enterprise development will likely necessitate some level of capitalization through a grant, direct funding or micro loan. Small business training initiatives also need to be accompanied by strategies to provide necessary follow up and technical assistance to individuals with viable business designs.

Value Added Products.
Processed seafood products, mangrove honey and small scale aquaculture are all potential viable ventures depending on local natural resource, capacity and market conditions. The determination of appropriate products should be evaluated at the local scale and based on the types of natural resources available that can be processed into a finished product that fetches a higher price. The processing of seafood, primarily of fish which is available year round, is likely to be more acceptable than honey production or aquaculture because it is more consistent and compatible with the fishing lifestyle. However, prior to production, a market must be secured to ensure the entry of the value added products into the economy.

Limitations: Finished products may add value to resources that would have been harvested regardless and is a way of maximizing the effort placed into resource extraction. Therefore, this may not necessarily alleviate pressure on the resource but could significantly contribute to the standard of living of fishing communities. In addition, value added products may have the adverse effect of increasing resource extraction due to the higher level of benefit derived from the same resource. In this regard it must be noted that alternative livelihood strategies are not standalone activities and often work best in conjunction with other strategies that relate to MPA management and resource management.

2.3 Opportunities linked to export markets

Export products display inherent challenges including price competitiveness, quality assurances and quantity guarantees. Three mariculture activities are suggested to develop for both domestic and export potential. Seaweed cultivation has long been promoted as an economic alternative for fishers in Asia and initiatives are already underway to foment seaweed mariculture in Belize. Two other alternatives that would be oriented primarily towards export production, grouper and conch mariculture, are described as exploratory alternatives.

2.3.1 Seaweed Cultivation

The cultivation of seaweed (red algae) in coastal areas has proven to be a profitable economic activity for fisher households in the Indo Pacific area and the Philippines in particular. Seaweed is easy to cultivate, requires a low initial investment and can provide rapid and high returns. Furthermore, seaweed farming is relatively benign from an environmental standpoint compared to other forms of mariculture (Crawford 2002).

In Belize, Jamaica, the Eastern Caribbean and some areas of Honduras and Panama seaweed is consumed in local beverages and desserts (Smith 1998). In Belize seaweed is considered to have medicinal, revitalizing and aphrodisiac qualities. It is sold by street vendors in Dangriga and seaweed shakes and ice cream are popular throughout the country. One of the naturally occurring varieties of seaweed found in Belize, *Eucheuma isiforme,* also displays high export potential and by the late 1990s the country was exporting 800kg (air dry weight) of Eucheuma to the USA for use in health foods (Smith 1998). The seaweed reportedly fetches four times the price as an export to the U.S. than in the domestic market (CCT 2003).

To date the supply to meet local and export demand has been satisfied by harvesting natural stocks in accessible near shore areas. These naturally occurring stocks are being rapidly depleted. Efforts are therefore underway to explore the viability of Eucheuma cultivation as an economic alternative for fishermen. The Dangriga Development Initiative, in

collaboration with a researcher from the Wildlife Conservation Society and with seed money from the UNDP/COMPACT project, has provided assistance to fishers to establish seaweed farms on the islands in the Tobacco Caye Range in the South Water Caye Marine Reserve. Fishers are now reportedly earning up to US $125 a month from seaweed sales. Furthermore, a group of international donors including WWF is financing a pilot farm and workshops for fishers to disseminate seaweed cultivation methods (Ibid, ICRAN 2006).

Seaweed farming appears to hold considerable potential as an income earner and supplementary economic activity in Belize which could perhaps be replicated in other areas of the MAR region. The product displays domestic market demand; promise for export; ease of production; and profit potential. On the other hand, the experience in the Philippines raises questions regarding the degree to which seaweed reduces fishing. Seaweed farmers who are fishers were often found to continue fishing although they may reduce their effort. Seaweed is subject to market price collapses and during bust cycles fishers tend to reenter the sector or intensify their fishing activities (Crawford 2002). Other issues that need to be explored include: the assumption that seaweed farming will be most attractive to and appropriate for professional fishers as opposed to other groups; the issue of competitiveness and exports (i.e. whether Belizean seaweed can be produced at a sufficient quantity and low enough cost to compete with producers in Asia); and the competition for use of inshore areas (Smith and Renard 2002). A marketing assessment reportedly being sponsored by WWF should address some of these issues.

2.3.2 Conch Mariculture

Due to the economic importance of local Queen Conch consumption and exports in Belize, Honduras and southern Quintana Roo and the precarious condition of the natural stocks, conch mariculture should be explored as a potential option in the MAR region.

Currently there is only one commercial *Strombus gigas* farm in the world; the Caicos Conch Farm, on Provo in the Turks & Caicos Islands. This farm was developed by Chuck Hesse, an American permanent resident of the Bahamas who is a marine scientist and former SCUBA instructor for the US Navy. Over the last two decades Hesse has reportedly developed a cost effective method for the commercial production of conch based on the commercialization of juveniles with a two year growth period. Last year the farm sold over 200,000 pounds of live juvenile conch as "ocean escargot" to upscale restaurants in the United States. Besides conch production, the farm also receives a hundred thousand visitors a year as an ecotourism attraction and sells live juveniles to the aquarium trade. A conch farm of this kind also may provide opportunities for the production of collateral goods including dried conch offal for Asian markets, culture conch pearls, conch shell and pearl jewelry and eggs to restore wild stocks (Robinson 1999).

Finally, further substantiating the possible viability of this activity was a recent announcement of a breakthrough in reproducing Queen Conch under cultured conditions by researchers of Harbor Branch Oceanographic Institution's Aquaculture Division (Harbor Branch Oceanographic 2006).

2.3.3 Grouper Farming

Due to the economic importance of grouper in the MAR region and threats to SPAGs, the potential for implementing grouper aquaculture or mariculture techniques should be explored. The Aquaculture Department of the Southeast Asian Fisheries development Center (SEAFDEC/AQD) in the Philippines has been developing nursery and grow out techniques for hatchery bred grouper. These efforts remain in the experimental stage but have produced some encouraging results regarding the production of the orange spotted grouper. In earthen ponds, for example, "survival ranges of 50 67% in the nursery

and 72 85% during grow out" have been achieved. Also reported is the fact that the culture system could prove highly profitable with a payback period of 1.7 years.[3]

TNC has also been involved in supporting a Fish Culture Project in Komodo Park in Indonesia for the production of different species of grouper, sea bass and mangrove jack. The project included the construction of a hatchery and brood stock cages and the creation of partnerships with local research institutes to provide technical support. Community involvement involves the establishment of village based grow out farms. The experience obtained in that project could perhaps be drawn upon for the development of mariculture activities in the MAR region (Mous et. al 2003).

2.3.4 Summary of Opportunities for Development of Goods and Services for Export Markets

Of the three mariculture alternatives presented seaweed clearly is the most promising option due to local market demand and demonstrated success of seaweed cultivation in Asia. Both of the other options present limitations including high set up costs, breeding complexities and possible commercialization issues and will require significant research to understand the costs and viability of transferring these technologies to the MAR region. How,ever, if shown to be viable, these could eventually prove to be the most economically lucrative and culturally acceptable alternatives with the greatest potential to directly reduce fishing pressure in the region.

3 This information was found at www.enaca.org/modules/mydownloads/viewcat.php?cid 114

CHAPTER 3

RAPID ASSESSMENT OF ECOTOURISM GUIDE TRAINING AS AN ALTERNATIVE LIVELIHOOD STRATEGY

The preceding chapter provided an overview of opportunities for labor and enterprise development in different areas of the MAR region that could constitute potential alternatives for rural fishing communities based on existing market demand conditions. This chapter complements that analysis by providing an assessment of the impact of programs to train fishers to be ecotourism guides. The training of ecotourism guides has been the primary activity carried out on a regional scale in recent years to provide fishers with skills to generate alternative sources of income. This evaluation focuses on training sponsored by TNC, MBRS and the UNDP GEF SGP between 2003 and 2005.[51]

The training is assessed based on the following parameters: the degree to which recruitment and selection has successfully targeted fishers for training; the percentage of fishers who, after training, are generating income from formal or self employment obtained as a result of training related skills development; and the numbers of fishers who have reduced fishing effort or stopped fishing entirely as a result of new economic activities made possible by the training. Information was obtained on the past and current activities of 44 participants in ecotourism training through direct interviews and consultations with acquaintances. The assessment is further supported by information obtained through interviews with key informants from implementing agencies and project reports.

The evaluation indicated that currently, the overall goals of alternative livelihood strategies to reduce fishing pressure on marine resources while increasing the standards of living in fishing communities have not been met. The assessment revealed that the training has primarily targeted communities in which there is a low level of demand for tour guide services and in these areas employment success has been minimal. The recruitment of fishers has been hampered by lack of interest in training especially on the part of older, more established fishers. In areas of higher demand for ecoguide services, a significant number of participants earn some income using their training but employment achievement has been more successful for non fishers and part time fishers with pre established tourism experience than for participants who were full and part time commercial fishers. To date, the transfer of knowledge and skills alone has not proved sufficient to reduce fishing effort or to move established commercial fishers out of fishing.

Tourism remains a high potential alternative especially for younger fishers. However, results suggest that due to the fact that opportunities are not equally distributed across the region and there appears to be resistance to relocation, more effort needs to be dedicated to the delivery of complementary services to meet alternative livelihood goals. These include initiatives such as job placement, internship and mentor experiences, relocation incentives, provision of guide certification and other specialized skills that will enhance income potential and other activities to facilitate the incorporation of trainees into tourism alternatives.

3.1 Total numbers and types of training in alternative livelihoods

The leading sponsors of fisher targeted training initiatives in the region are MBRS; The Nature Conservancy and the UNDP. A brief overview of the training that was funded by each of these organizations is provided below while a detailed analysis of the trainings follows.

MBRS: MBRS sponsored ecotourism guide training for approximately 113 individuals in the northern and southern transboundary areas, although only ninety six participants could be confirmed as having received the training from the lists provided by project implementers.[52] MBRS contracted two local NGOs to carry out the training: Green Reef, an NGO based in San Pedro, Ambergris Caye, BZ and the Toledo Institute for Development and Environment (TIDE) in Punta Gorda, BZ. These two NGOs were chosen by MRBS to recruit and organize courses due to their track records and strategic locations in the northern and southern transboundary areas to facilitate cross border training of fishers.

All training was carried out in the summer of 2004. In the north, Green Reef provided training to 57 participants from Mexico and Northern Belize in Snorkeling/Kayaking, SCUBA Open Water; Sport Fishing and Nature Guiding. All fifty seven of these participants also took a course in small business management. TIDE trained at least 39 participants from southern Belize, Guatemala and Honduras in the same fields. TIDE also offered Spanish language SCUBA and kayaking courses for Guatemalans and Hondurans.

The Nature Conservancy: The Nature Conservancy's MAR Program sponsored fly fishing and SCUBA Divemaster training for 29 participants in 2003. The training targeted fishers from communities in the areas adjacent to Gladden Spit and Silk Cayes Marine Reserve. Friends of Nature in Placencia carried out the recruitment of fishers and organized the courses. Sixteen individuals were trained in fly fishing and 13 individuals received SCUBA training to the Divemaster level. The SCUBA training was partially financed by a UNDP COMPACT grant.

UNDP: Funding from the UNDP GEF Small Grants programs was used to train 86 participants in the Toledo District of Belize in courses organized by TIDE in 2004 2005. Training included ecotourism guide specialties (birding; kayaking; sports fishing; and SCUBA

TNC/FON Fly Fishing Trainees (photo courtesy of Alex Arrivillaga)

diving) as well as courses in hospitality and small business management which were primarily attended by women. Due to slightly different project objectives, the recruitment for these courses does not appear to have targeted fishers as strictly as the MBRS and TNC financed courses.

Summary of Training.
Through funding from these organizations, a total of 201 course participants from four countries were provided with ecotourism guide training from 2003 2005 (Tables 3.1 and 3.2). Fifty three percent (53%) of the participants were from southern Belize; 22% from Northern Belize; 11% from Guatemala; 7% from Honduras and 6% from Mexico. The primary specialization offered was sport fishing (31%) followed by SCUBA diving (25%); kayaking/snorkeling (18%); nature guiding (17%) and birding (8%). Furthermore, under UNDP funding 18 individuals in the Toledo area were provided with training in Hospitality Management and another 18 with training in Small Business Management (Table 13).

3.2 Impact and success to date of training programs

Broadly accepted quantifiable objectives or monitoring measures do not appear to have been developed to evaluate the success of the training by any of the organizations and no pre training information was gathered on course participant status to provide a baseline for evaluation and monitoring.[53] The evaluation of program impact is therefore based on the following general indicators derived from discussions with project sponsoring organizations regarding expectations for training results:

a. The degree to which recruitment and selection has successfully targeted fishers for training. 'Fishers' refers to individuals who dedicate the majority of their productive time in the capture of natural stocks of crustaceans, scaly fish or other marine species and obtain a significant amount of their annual income and/or household sustenance through these activities. Occasional or casual fishers do not fall within this category.

Table 13
Summary of Training Provided by Nationality and Training Area of Participants

Training Area	México	Belize	Guatemala	Honduras	Totals
Ecotour Guide					
Diving Total	7	37	6	1	51
Dive master	*n/a*	*20*	*0*	0	20
Open Water	7	6	0	1	14
Advanced	n/a	11	6	0	17
Fly Fishing	2	45	12	4	63
Kayaking and Snorkeling	1	32	0	4	37
Nature Guiding	2	22	5	5	34
Birding	0	16	0	0	16
Sub-total	12	152	23	14	201
Business Management targeted to females, UNDP Tide					
Hospitality Management	0	18	0	0	18
Small business management	0	18	0	0	18
Sub-total	0	36	0	0	36
TOTALS	**12**	**188**	**23**	**14**	**237**

Table 14
Summary of Training provided with TNC, MBRS and UNDP Sponsorship in the MAR region

Course	Location	Organization	Date	Number of Participants								
				TOT	MAL	FEM	MX	N. BZ	S. BZ	HON	GUAT	Source/ (Notes)
MBRS												
Snorkeling and kayaking	San Pedro, BZ	Green Reef	31/5 – 6/6/2004	11	11	0	1	10	0	0	0	2,5
Scuba Open Water	San Pedro, BZ	Green Reef	31/5 – 6/6/2004	13	13	0	7	6	0	0	0	1,2,5
Sport fishing	San Pedro, BZ	Green Reef	N/a	16	16	0	2	14	0	0	0	5
Nature Guiding	San Pedro, BZ	Green Reef	N/a	17	13	4	2	15	0	0	0	5
Nature guiding	Punta Gorda, BZ	TIDE	7/6 – 11/6/2004	17	n/a	n/a	0	0	7	5	5	2 (a)
English SCUBA Open Water	Punta Gorda, BZ	TIDE	29/6 – 7/7/2004	11	11	0	0	0	11	0	0	2,3
Spanish SCUBA Open Water	Punta Gorda, BZ	TIDE	6/7 – 16/7 or 13/7 – 21/7/ 2004	6	5	1	0	0	0	0	6	2,3(b)
English Kayaking and snorkeling	Punta Gorda, BZ	TIDE	26/7 – 30/7/2004	5	5	0	0	0	5	0	0	2,3
Spanish kayaking and snorkeling	Punta Gorda, BZ	TIDE	9/8 – 12/8/2004	n/a	n/a	n/a	0	0	0	n/a	n/a	2(c)
Sport fishing	Punta Gorda, BZ	TIDE	2/8 – 6/8/2004	17	16	1	0	0	5	0	12	2,3(d)
			Subtotals	**113**	***90***	***6***	**12**	**45**	**28**	**5**	**23**	(e,f)
TNC												
Dive Conservation	Placencia, BZ	FON	2003	13	10	3	0	0	13	0	0	4
Fly Fishing	Placencia, BZ	FON	2003	16	16	0	0	0	16	0	0	4
			Subtotals	29	26	3	0	0	29	0	0	
UNDP												
Birding	Punta Gorda, BZ	TIDE	4/10 – 7/10/2004	9	7	2	0	0	9	0	0	3
Hospitality	Punta Gorda, BZ	TIDE	8/10 – 9/10/2004	11	3	8	0	0	11	0	0	3
Kayaking	Punta Gorda, BZ	TIDE	1/11 – 5/11/2004	11	10	1	0	0	11	0	0	3
Fly fishing	Punta Gorda, BZ	TIDE	25/10 – 29/10/2004	10	10	0	0	0	10	0	0	3
Small business management	Punta Gorda, BZ	TIDE	30/10 – 31/10/2004	18	8	10	0	0	18	0	0	3
Hospitality	Punta Gorda, BZ	TIDE	9/4 – 10/4/2005	7	0	7	0	0	7	0	0	3
Kayaking	Punta Gorda, BZ	TIDE	18/4 – 21/4/2005	6	6	0	0	0	6	0	0	3
Birding	Punta Gorda, BZ	TIDE	17/5 – 20/5/2005	7	6	1	0	0	7	0	0	3
Diving	Punta Gorda, BZ	TIDE	2005	7	7	0	0	0	7	0	0	3
			Subtotals	**86**	**57**	**29**	**0**	**0**	**86**	0	0	3
			TOTALS	228	173	38	12	45	143	5	23	

Sources:

1 Newspaper article in the Ambergris Today online site: "Fishermen get training for alternative livelihood" found at http://ambergristoday.com/archives/3_6_04/index.html#story3.

2 Newsfeature on MBRS website, 2004: "MBRS Offers Eco Tourism Training for Fishers" found at http://www.mbrs.org.bz/english/news2004.htm.

3 Lists of participants provided by TIDE.

4 List of participants reconstructed with assistance from Friends of Nature representatives.

5 Report: Project Update: Training in Forms of Sustainable Livelihoods for Communities Dependent on Marine and Coastal Resources in the MBRS Region. Green Reef Environmental Institute, San Pedro, Ambergris Caye. August 2004

Notes:

a Not included in lists provided by TIDE, only in MBRS News feature.

b The dates in the article and the list provided by TIDE do not correspond, and the TIDE list does not include Honduran participants mentioned in the MBRS news feature.

c This was mentioned in the MBRS news feature but was not included in the TIDE list.

d The news feature mentions participation of Hondurans which were not included in the TIDE list.

e A total of eleven MBRS were identified during fieldwork in Honduras. Sources however only list 5 Honduran trainees. It is possible that a significant number of the approximately 31 unidentified trainees were Honduran.

f Disaggregation by sex does not include the 17 reportedly trained by TIDE in Nature Guiding in 2004.

b. The percentage of fishers who, after training, are supplementing their earnings or generating a significant amount of their income from formal or self employment acquired as a result of training related skills.

c. The percentage of fishers who have reduced fishing effort or stopped fishing entirely as a result of new economic activities made possible by the training.

The fact that objectives were not articulated for these training projects also means that no timeframe was established for measuring impact. It should be noted that most of the training that was evaluated took place within the last two to three years which should be sufficient time to expect individuals to have made some sort of move into employment using the skills acquired in training.

To understand the degree to which ecotourism training has successfully contributed to the objectives, the consultant was able quantify past and current activities for 44 participants trained by TNC/FON in Placencia and MBRS/TIDE in Monkey River, Belize and Honduras either through direct interviews or consulting acquaintances. This information is summarized in Table 3.3. Other information summarized from Green Reef/MBRS reports complements this data (Table 3.4) as does qualitative information obtained through interviews with fishers and project sponsors throughout the region.

The information that was obtained leads to the following conclusions regarding the success of training to date towards achievement of general objectives:

Recruitment of Commercial Fishers.
Representatives from FON, TIDE and MBRS report some difficulties in the recruitment of fishers into the ecotourism training. Of the 44 training participants interviewed, 41% were neither full nor part time fishers at the time that training took place. This percentage is driven by the fact that fifty two percent (52%) of TNC/FON trainees were non fishers. Green Reef/MBRS reports also indicate problems with the recruitment of fishers due to the fact that the primary occupation of 40% of their trainees was something other than 'fisherman.' TIDE representatives also reported struggles with recruitment of fishers although available data is insufficient to corroborate their statements.

Lack of sufficient interest was reported as the primary reason for difficulties in the recruitment of fishers into training. FON and TIDE representatives reported deliberately filling course quotas with non fishers due to inability to attract sufficient numbers of commercial fishers. There was a particular lack of interest amongst the older and better established commercial fishers.[54] The courses appealed primarily to younger individuals, fishers and non fishers, many of whom already displayed some degree of involvement with tourism activities before training (Mendez pers. comm.). For example, 33% of MBRS/Green Reef trainees were licensed tour guides before undertaking the training. Lack of interest also appears directed towards particular fields of specialization. Informants report, for example, that it was easier to attract fishers into sports fishing and diving courses than into nature guiding courses.

Employment Success.
Approximately 48% of the sample of 44 participants trained by FON/TNC and TIDE/MBRS are generating income from work in their field of training. Only 25% of these participants report tourism employment as constituting either the primary or a significant source of income.

For the remaining 23%, tourism provides occasional or opportunistic employment. Green Reef similarly reported that 33% of their participants were already earning some income in the tourism industry in August of 2004, only a

few months after the completion of training. These figures indicate that training has successfully enhanced the ability of participants to generate income from tourism activities. However, when evaluating the success of the training in light of the broader objectives of the project the figures prove somewhat misleading. The majority of participants reporting employment was either non fishers or already involved in the tourism industry before the training and rates of fisher employment are significantly lower. For example, the most successful training in terms of employment was FON/TNC's divemaster course. Eighty five percent (85%) of FON/TNC divemaster trainees receive income from employment that involves diving and diving represents either a full time job or a significant percentage of earnings for 54 % of the course participants. However, only three (23%) of the course participants were fishers. Two of the three fishers obtain occasional diving work but commercial fishing remains their most significant source of income.

As will be discussed in greater detail below, factors such as willingness to migrate, demand for services and job opportunity play an important role in the acquisition of employment. The majority of dive participants who procured employment came from villages within easy access to the Placencia area, an area that displays a high demand for divemasters. On the other hand, employment rates for participants in the fly fishing course, a specialty in which demand for services is limited to well known, highly experienced guides, are extremely low. Five of the 22 FON/MBRS fly fishing course participants in the sample obtain income through tourism activities. However, two of these participants already were heavily involved in tourism before taking the fly fishing course: one was already a fly fisher for a resort and continues to work for the same resort and the other individual is primarily a dive instructor who occasionally guides fly fish tours. Of the other three participants that receive occasional tourism employment, one occasionally works as an assistant to a fly fisher in Hopkins and the other two usually work as Monkey River guides and rarely if ever lead fly fishing expeditions.

Pre existing demand for services clearly plays a fundamental role in employment rates. For example, TIDE representatives reported that very few MBRS or UNDP sponsored trainees currently work as guides on more than very irregular basis due to low visitation and low demand for tour guides in the Toledo area.[55] Only three of the nine Honduran trainees (33%) produce some income through tourism. These come from areas such as Omoa and Nueva Armenia where tourism visitation remains low. Two of the Hondurans reportedly obtain frequent work as nature guides in the Omoa area. The other works occasionally as a diver. Only one of these three (the diver) was a fisher at the time of training.[56]

Table 15
Results of Recruitment and Training by Area for TNC/FON and MBRS/Honduras

Area of Training	% (number) Fishing most important activity before training	% (number) Fished in combination with other activities before training	% (number) of Total Participants who were fishers	% (number) Who worked full or part time in tourism before training	% (number) of course participants working significantly in field of training	% (number) of participants working occasionally in field or using skills in job	% (number) of total participants for whom fishing is still most significant activity	% (number) of total participants who still fish commercially part-time
TNC/FON (Belize) 29 participants total								
Fly fishing (16)	56 (9)	25 (2)	69 (11)	19 (3)	13 (2)	19 (3)	44 (7)	25 (4)
Dive master (13)	23 (3)	0 (0)	23 (3)	8 (1)	54 (7)	31 (4)	23 (3)	0 (0)
Sub-Total	41 (12)	7 (2)	48 (14)	14 (4)	31 (9)	24 (7)	34 (10)	14 (4)
TIDE/MBRS Trainees from Monkey River 4 participants (3 individuals from Monkey River took Diving with FON and Sport Fishing with TIDE/MBRS. These are included in the FON/TNC training numbers).								
Sport Fishing (2)	100 (2)	0 (0)	100 (2)	N/a	0(0)	100 (2)	100 (2)	0 (0)
Kayaking & Snorkeling (2)	50 (1)	0 (0)	50 (1)	N/a	0(0)	0 (0)	50 (1)	0 (0)
Sub-Total	75 (3)	0 (0)	75 (3)	N/a	0 (0)	50 (2)	75 (3)	0 (0)
MBRS (Hondurans) 11 participants total								
Sport fishing/ Kayaking (4)	100 (4)	0 (0)	100 (4)	0 (0)	0 (0)	0 (0)	75 (3)	0 (0)
Diving (1)	100 (1)	0 (0)	100 (1)	0 (0)	0 (0)	100 (1)	0 (0)	100 (1)
Nature Guide (1)	33 (1)	0 (0)	33 (1)	0 (0)	66 (2)	0 (0)	33 (1)	0 (0)
Birding (1)	100 (1)	0 (0)	100 (1)	0 (0)	0 (0)	0 (0)	100 (1)	0 (0)
Kayak only (2)	100 (2)	0 (0)	100 (2)	0 (0)	0 (0)	0 (0)	100 (2)	0 (0)
Sub-Total	82 (9)	0 (0)	82 (9)	0 (0)	18 (2)	9 (1)	73 (8)	9 (1)
TOTALS	55 (24)	5 (2)	59 (26)	10 (4)	25 (11)	23 (10)	48 (21)	11 (5)

Table 16
Characteristics of Green Reef/MBRS trainees

Total trained	Percent report occupation as fishers	Primary occupations of "non-fishers"	Fields with low fisher participation (% of course participants not fishers)	Percent licensed tour guides *before* training	Percent obtaining some income from tourism activities after training
57	60%	Tour guide -- 9% Student -- 9% Housewife -- 7%	Nature guide (82%) Sport fishing (38%)	33%	33%

Source: Green Reef 2004

Reduction of Fishing Effort.
The results of the training indicate that even those fishers who work in tourism continue fishing commercially and supplement their incomes with tourism activities. All of the trainees in the sample of 44 FON/TNC and TIDE/MBRS Trainees who fished commercially either on a full or part time basis continue to fish commercially. Furthermore, interviews suggest that only two or three (9 13%) of these fishers may have become sufficiently involved in tourism after their training to have altered the amount of effort they dedicate to fishing. However, insufficient information is available to evaluate in depth the degree to which these participants have reduced their fishing effort as a result of their involvement in alternative activities.

This pattern is what would be expected given the way that fishers in the MAR region attempt to optimize their time and earnings by balancing fishing and tourism activities when possible. Under the right circumstances it is clear that involvement in tourism can provide sufficient incentive to transition some individuals out of fishing altogether. For example, the one fisher from Sambo Creek who now works as an independent local tour operator reported that his tourism business generates so much income and requires so much time that he has completely abandoned commercial fishing.[57] More commonly, however, fishers interviewed in the MAR region express an interest in using tourism alternatives as a replacement for the fishing of high risk, low value species and to supplement income during the off season or months of low fishery productivity.

In Punta Allen, for example, most fishers have abandoned fishing for scaly fish (*escama*) in the lobster off season in favor of tour guiding activities. They report these fish are much more valuable as resources to attract tourists and fly fishers than as a commodity sold in the market. On the other hand they continue to consider lobster fishing to be the economic foundation of the community. Similarly San Pedro and Caye Caulker fishers reportedly have become part time fishers, balancing their time between lobster fishing and tour guide activities (Huitric 2003). The fishers interviewed in Punta Herrero and Monkey River expressed a strong interest establishing a similar system in their communities in which they could replace the need to fish for species with lower commercial value with steadier income earned from tourism activities.

The implicit assumption also exists that as fishers move into more profitable activities associated with tourism they will automatically reduce the time they devote to fishing. However it is evident that fishers can engage in tourism activities without substantially reducing their fishing effort. According to Collins (2005), for example, the sports fishing guides who work for the resorts in Punta Gorda also continue to work as commercial fishers. Her survey showed that the reported fishing effort of the fisher ecoguides displays little difference from that of the non guide commercial fishers she interviewed. In the case of lobster, traps only need to be checked once or twice a week and the additional time can be devoted to other activities including tour guiding. Fishing often takes place in family groups, and income earned by one member from tourism activities can be used to invest in the intensification of fishing activities of other family members.

Finally not all fishers in the region welcome tourism initiatives as a supplementary activity. Many Garifuna fishers in Cayos Cochinos and the shrimp trawlers in Livingston, for example, display significant trepidation regarding tourism, expressing the fear that it will bring a loss of traditional landing sites and further restrictions on fishing grounds to "save the fish for the tourists." In depth research in the region is clearly required to better understand the dynamic relationship between supplementary economic activities and fishing effort.

Other Initiatives for Alternative Livelihoods in the MAR region (Develop synergies).
There are numerous other more geographically focused training initiatives and projects to provide economic alternatives in the MAR region and TNC Platform site communities that were identified in the fieldwork stage of the project. These initiatives share similar objectives those of the TNC/MBRS/UNDP sponsored training programs to improve economic conditions in communities in the proximity of protected areas and reduce pressure on resources. But not all of the projects are targeted towards fishers. These other initiatives are presented by country in a tabular format (Appendix III) and include both tourism oriented and other types of training and projects. The information is provided to identify potential areas of collaboration, to avoid duplication of effort, and to facilitate building synergies in developing alternative livelihood activities in the region.

CHAPTER 4

COMMUNITY ALTERNATIVE LIVELIHOODS AGENDA

The first three chapters of this report provided an analysis of opportunities and limitations of potential alternative livelihood activities in the MAR coastal region. This chapter builds on that information to propose a concrete action plan for promoting economic alternatives in the region.

The chapter begins with a discussion of some of the key lessons learned from the alternative livelihood experiences and especially the eco guide training programs discussed in chapter 3. These past experiences served as the foundation for developing a list of recommended essential elements for success of alternative livelihoods activities in fishing communities in the MAR, followed by a discussion of the "five pillars" or foundational strategies for alternative/ complementary livelihoods programs at a regional level including methodological considerations for the achievement of each strategy. The five pillars incorporate all of the different alternatives discussed in chapter 2. This chapter then concludes with a proposed Community Alternative Livelihoods Agenda broken down into three progressive phases. Each phase is further disaggregated into specific objectives, activities, locations, targeted groups and indicators of success. The agenda focuses on TNC platform site and Punta de Manabique communities but could be easily adapted to incorporate other key communities in the MAR region.

4.1 Lessons learned from evaluated experiences

The following encapsulates lessons learned from the experiences evaluated. The majority of these lessons should be applied to future training and non training based initiatives to effectively achieve alternative livelihoods and other related community based goals.

Recruitment (ensure appropriate targeting of project beneficiaries).
Clear Identification of Alternative Livelihoods Strategy Goals Recruitment will be more successful if establishing predefined goals for training outcomes and more carefully targeting participants in recruitment. No criteria appear to have been established regarding which fishers ideally should be targeted for ecotourism training to most successfully achieve the goal of reduction of fishing effort. For all alternative livelihood projects it would be useful to consider questions such as: Should projects target younger fishers who still are not heavily invested in fishing and therefore may prove more amenable to switching occupations? Should projects attempt to target the most productive fishers to quickly reduce pressure on fishing grounds? Or should projects target older fishers, providing opportunities to move more quickly retire from commercial fishing?

In light of our limited overall understanding of fisher economic behavior and the fisher household diversity, this is a strategic decision that needs to be made by the MAR program. Targeting younger fishers may hold greater promise of success of actually transitioning individuals into livelihoods other than fishing but also may imply postponing significant reductions in fishing pressure at present to secure a gradual reduction in numbers of fishers and fishing pressure in the future. Targeting the most productive and older fishers would seem to be a logical a strategy to reduce fishing pressure within a shorter timeframe. But experience suggests that this strategy probably holds much less promise of success due to the fact

that established livelihood preferences, family and community commitments, existing investments in fishing and profitability factors make it much more difficult to draw well established fishers into alternative livelihoods that will encourage a reduction in overall fishing efforts and investment.

Identification of Appropriate Alternatives Different activities clearly appeal to different groups based on factors such as age, earnings, time dedicated to fishing vis à vis other activities, location and migratory disposition. Establishing clearer criteria and gaining a better understanding of community values and lifestyles will enhance the ability to tailor make programs, attracting targeted groups of fishers into project participation and increasing the potential for achievement of objectives. Alternative livelihood programs would clearly benefit from a region wide socioeconomic and opinion survey applied to a well designed statistically representative sample of fishers and their households to understand the different classifications of fishers by type, the diversity of economic activities of fishers and their households, income, livelihood preferences and other critical variables that can be used to improve targeting for alternative livelihoods initiatives.

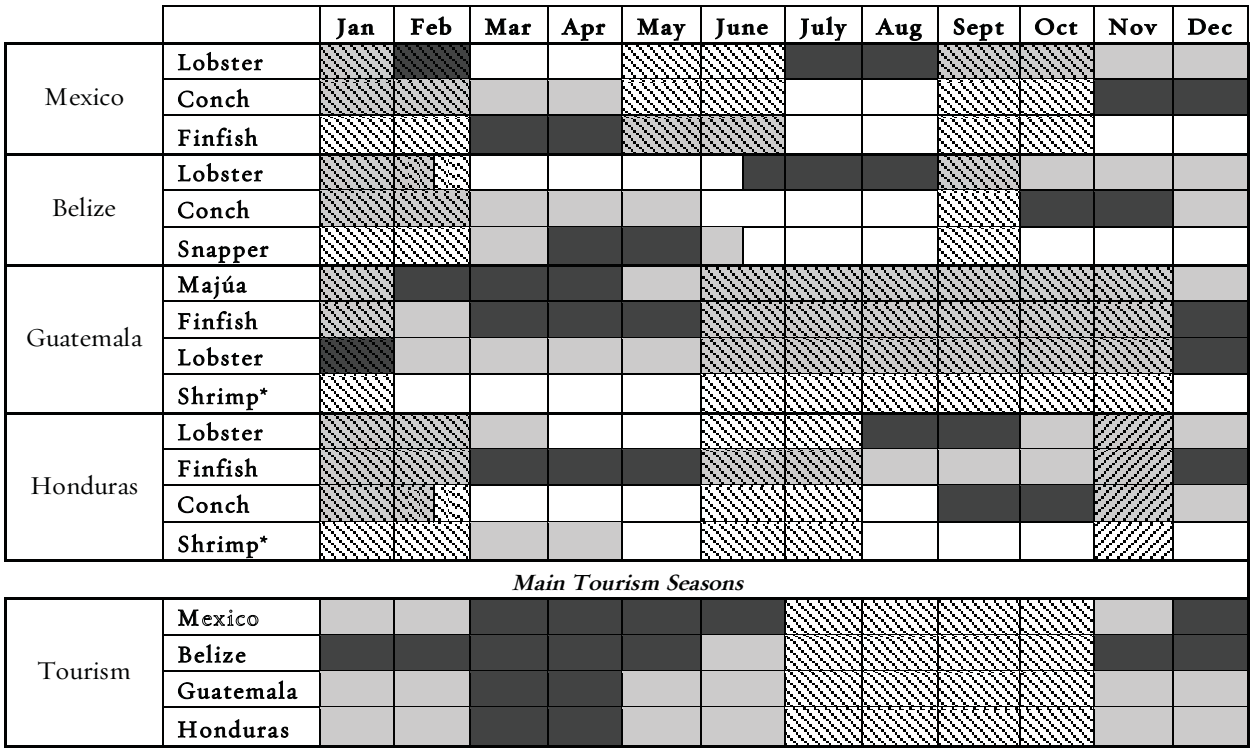
Clear Identification of Target Audience Clear generational issues also emerged in the recruitment of participants into ecoguide training programs. Efforts to recruit older established commercial fishers were largely unsuccessful. Informants concur that the ecotourism guide courses hold greater appeal to younger fishers and non fishers and activities such as SCUBA diving especially tend to hold greater appeal to younger individuals. For example, the average age of all participants in the FON/TNC courses at the time of training was 26 and the oldest divemaster in Hopkins village was 27 years old at the time of the study. On the other hand, lack of education and literacy may be a problem that discourages older fishers from taking courses. They also may simply not be interested in working with tourists and are more accustomed to self employment and unwilling to consider working as employees of resorts or tour operators. Therefore, successful recruitment requires understanding the relationship between achieving the goals and the appropriate audience to engage as well as using appropriate methods and alternatives with which to engage the target audience. It is strongly recommended that target audience for different types of economic alternatives be clarified through further discussions with fishers of different age groups and levels of experience regarding the types of training and economic activities they are interested in.

Timing and Duration of Event Fishers weigh the cost of lost fishing opportunity in making a decision to participate in training. Commercial fishing is highly seasonal and successful activities to engage fishers are those planned outside of known lucrative fishing timeframes such as the opening of lobster and conch harvest or the peak of the Nassau grouper spawning. Working with the fisher's schedule increases the chances for success not only by showing respect for their time but also by engaging at a time when they are free and more apt to participate. Moreover, careful consideration needs to be paid to distance from home and fishing schedules when planning courses. The problems that Green Reef reported in transboundary recruitment (only 12 of the 57 course participants came from Mexico) may have been related to the fact that participants were reportedly required to relocate to Belize for a significant period of time (up to a month) in order to participate in training.[58] As a result, in the north the trans boundary strategy may have favored the training of younger fishers with fewer financial ties to fishing and Belizeans who lived in closer proximity to the training site.

As shown in Table 17, the best months to carry out activities with fishers across the region appear to be mid January to perhaps early to mid March and September. Strong consideration should be given to avoiding planning activities with fishers during the first two months of lobster season in Mexico and Belize (mid June through August) as well as the Easter Season (early March through

April) which is a period of high tourism activity as well as finfish fishing season throughout the region (and majúa in Guatemala). The table also shows that there are country specific periods of high/low activity based on differing fishing targets and local restrictions. Other considerations involve conducting activities close to the fishers' home base whenever possible. Whether during the season or in the off season, it is strongly recommended that the fishers in each country be closely consulted and a process of socialization be carried out with them before scheduling any activities.

Table 17
Fishing and Tourism Seasons in the MAR Region
Fishing Seasons



Color code legend:

= Early high season
= Regular season (less activity)
= Off season, little to no activity
= Lowest activity periods proposed for activities with fishers

Market Access.
Much of the ecotourism training provided appears to have been conceived under one of three assumptions regarding employment of participants: 1) that the guides themselves were going to be able to attract clients and generate greater demand for their services in their home area; 2) that tourist visitation and hence demand for guide services would increase in the near future in the home area to meet supply; or 3) that the participants would relocate to areas where demand exists for their new talents. However, the following examples clearly demonstrate a lack of information to substantiate these assumptions and a mis connection between the trainings and what they were intended to achieve.

The ecoguide training projects have primarily targeted fishers from areas with low visitation and often provided training in specialties not available in the trainees' home communities. In the north of Belize, for example, 42 of the 45 Belizean course participants came from Sarteneja, an important community because it is the base of operations for the majority of Belizean fishers but which receives very little tourism visitation. Also, six individuals from Sarteneja were trained as SCUBA guides although, according to Green Reef (2005), "there is not good diving off of that coast."

The divemasters trained by FON/TNC in Monkey River are able to access the Placencia and local markets for occasional employment but express that that daily transportation costs to town are prohibitive and that potential earnings in town are insufficient to entice them to move to Placencia where they can practice diving full time.[59] Similarly, the Toledo district received around 15,000 visitors last year, or approximately 41 tourists a day, yet between 2004 and 2005 there were 78 individuals trained to be ecoguides (i.e two guides for every daily tourist). Twelve fly fishers and six SCUBA divers were trained from Guatemala yet in the Amatique Bay area there are no organized sports fishing activities and no dive shops or dive tourism industry.

In light of these observations, the achievement of project objectives requires greater ongoing attention to enhancing services such as job opportunities, job placement, earning potential, and attitudes and cost incentives related to daily, seasonal or permanent relocation.

Job Placement (Enhance ability of beneficiaries to succeed). Alternative livelihood programs need to deliver services beyond training to increase probabilities of success. In the case of ecotourism training, complementary activities could include job placement strategies, internships and mentorship experiences, assistance in procuring equipment, and more specialized training when needed.

Following are considerations to take into account in follow up initiatives.

Guide licenses: Guides in Belize require licenses acquired through a 6 week training course provided by certified BTB instructors and supported by a local guide association. Although individuals may have to pay up to $600 and travel to distant locations to take the course, with a large enough group the course can be provided locally and at a significant discount.

In Guatemala obtaining a professional tour guide license requires a year of study Due to time considerations this program is beyond the reach of most commercial fishers but scholarships could be facilitated to train one or two young fishers in each community as licensed professional guides.

Apprenticeship programs: Fly fishing is the field that holds the greatest appeal for fishers and accordingly was offered to more participants (33%) than any of the other fields. It was also the field in which participants have probably displayed the lowest rate of success in acquiring employment.

Low rates of employment are the result of the job market structure and entry requirements for procuring employment as a fly fisher. Fly fishing is a highly specialized and costly sport characterized by demanding practitioners who

are willing to invest top dollar but expect high quality service in return. To meet demand, each community and a limited number of specialized resorts has a small group of older and experienced fishers with established reputations, clientele, and the resources necessary to acquire the equipment necessary to guide tours. The experienced fly fishers interviewed indicated that the best way to get into fly fishing is not by taking a course but through an apprenticeship with an independent fly fisher in the community or in one of the lodges. An apprenticeship is a means of gaining experience and slowly building a reputation and a client base and obtaining the equipment and capital needed to establish oneself independently.[60, 61]

Internships and appropriate levels of training: In contrast to fly fishing, SCUBA was the field in which the highest number of trainees has been able to acquire employment. Scuba diving appeals primarily to younger fishers and non fishers, both males and females, and provides more employment opportunities than fly fishing.[62] Certified divers can either obtain employment with a resort, work full or part time with different tour operators or procure a position with organizations that are conducting reef monitoring activities.

The key however to procuring most positions is the ability to supervise dives which requires PADI certification to the Divemaster level. Certification below the Divemaster level provides far fewer employment options. MBRS/Green Reef and MBRS/TIDE participants initially only received training to the Open Water level.[63] The fact that TNC/FON provided Divemaster level certification in their training and that FON facilitated the required 20 hours of logged dives required to achieve this level is one of the primary reasons for the high employment rates that were achieved by TNC/FON through this training.

Green Reef also organized internships for 15 SCUBA divers in dive shops in Ambergris Caye with funding from the USAID/UNF/ICRAN Meso American Reef Alliance Project. The internships appear to have produced positive results. A number of shops provided free training to upgrade the students' certification status. At least one of the dive shops expressed interest in hiring their interns. Internships not only provide students with hands on experience but also establish contacts between trainees and potential employers and should be used more frequently as a strategy to increase employment rates.
Other specialized skills and experiences: As noted in Chapter 2, the best way of capitalizing on the existing base of fisher/ecotourism guides in the region will be to consider responding to the demand for guides with higher levels of specialization and experience. Job opportunities exist in the region for guides who are bilingual and have higher degrees of specialization in nature, marine or archeological interpretation. Better trained guides with higher earnings potential may also display a greater willingness to relocate.

Need for Equipment, Credit and Business training: Trainees indicated that in some cases the lack of equipment such as kayaks and SCUBA gear impede ecotourism opportunities. Fly fishing equipment is expensive. Furthermore, reports indicate that in areas with low tourism demand fishers are unwilling to invest their own money equipment, preferring instead to make investments in fishing (Green Reef 2004). The MBRS 2004 report recognizes that alternative financing mechanisms such as a revolving fund or other low interest credit schemes need to be developed to support fishers and fishing communities in the development of alternative livelihoods. Training in marketing techniques, including internet marketing, was also a need expressed by tourism cooperatives/associations and NGOs throughout the region.

Evaluation of Success of Training (Build in strategies to track project success)
Except for the case of Green Reef/MBRS, participant lists of trainees were lost or incomplete and had to be reconstructed by memory. No baseline of trainee characteristics was established before training. No ongoing

monitoring procedures appear to be in place to track the progress of trainees. This makes future evaluations of project success more difficult, time consuming and costly and less precise.

It is usually a simple process to establish a baseline of key indicators based on project objectives at the beginning of any project to be used to for project evaluation. In the case of training, before initiating the course participants should be asked to complete a short questionnaire in which they define their age, dependents, current sources of income, fishing practices, and other indicators. The same exact questionnaire could be applied periodically to track change in indicators. Future training initiatives should include an explicit methodology to track and evaluate the success of fishers in obtaining employment and changing fishing practices over time.

4.2 Essential elements for success

In the assessment process, numerous themes emerged repeatedly as critical to the success of alternative livelihoods initiatives. These are summarized below as the recommended guiding principles that should be followed in order to increase the likelihood that projects will meet the objective of establishing long term economic alternatives in communities that will reduce fishing pressure on marine resources while improving the standard of living of residents.

1. ***Ensure market access and demand prior to investment:*** As noted in Chapter 2, one of the issues observed in the region involved the implementation of alternative livelihood projects and promotion of specific economic activities without any assessment of market demand or with market studies initiated only after major investments in training and infrastructure had been made. The likelihood of success for all projects will be greatly enhanced by assessing market demand for alternative skills and products, developing financial forecasts, and establishing strategies for commercialization before investments.

2. ***Capitalize on existing activities of fishers and communities:*** As noted in Chapter 2, it will be easier to increase incomes and the diversity of local economic opportunities by enhancing the earning potential of existing skills and community enterprises than through the introduction of unfamiliar alternatives. Similarly it will be easier to tap into existing markets opportunities than creating new markets for unfamiliar products.

3. ***Enhance success through the delivery of complementary services to meet alternative livelihood goals:*** As noted in Chapter 3, alternative livelihood programs should deliver ongoing follow up services to increase probabilities of success. For training this could include services such as job placement strategies or further enhanced of skills. In the case of small enterprise development this could include services such as facilitation of financing, business management mentorship and ongoing small business extension services.

4. ***Focus on supplemental rather than alternative employment for fishers:*** As discussed in chapter 2, fishers and their households already exercise a high degree of occupational multiplicity and have an interest in economic alternatives to supplement their fishing lifestyle. It must be realized and accepted that complete abandonment of fishing for many communities is an unrealistic expectation. A resistance towards the total transition from fishing into other alternatives is not only a characteristic of fishers in the MAR but has been well documented as a characteristic of fishers in the Philippines, Canada, the United States and in many other areas of the world. For many coastal communities, it is not a mere economic activity but rather a traditional practice and an intrinsic part of cultural identity.

   Alternatives should therefore emphasize supplementary activities that are compatible with the fishing lifestyle with the goal of promoting a shift from full to part time

fishing and initially reducing pressure on species of low commercial value. This would involve taking into account the seasonality of commercial fishing and an emphasis on economic activities involving flexible, part time or self employment opportunities. Consideration also needs to be paid to the potential income that can be generated by alternatives in comparison to existing activities.

5. ***Appropriately target project beneficiaries:*** As noted in chapter 3 different alternatives will appeal to different groups based on factors such as age, earnings and investments in fishing, location and ethnicity. A clearer understanding of the target audience will assist in identifying appropriate alternatives and establishing appropriate objectives for different groups. For example, as mentioned previously groups such as young fishers or part time fishers perhaps should receive preferential attention from alternative livelihood initiatives because they are more likely to be amenable to making a complete transition out of fishing than well established middle aged or older fishers.

6. ***Apply a participatory bottom up approach:*** Although the community livelihoods agenda below establishes broader regional scale objectives and strategies, experience indicates that successful promotion of alternative livelihoods at a community scale requires a bottom up approach and a sustained process of local engagement. Community initiatives must be comprised of pre , during and post engagement strategies as opposed to one off events or activities. Moreover, it must be realized that no single strategy approach will be appropriate for all sites due to uneven regional development and the diversity of socio economic, ethnic and natural environments in the region. Villages should be incorporated in a participatory fashion in as many of the processes as possible to establish local ownership of these processes as well as facilitate local learning. Alternative livelihood transitions have a much greater opportunity for success if they are developed by the communities themselves, reflect traditional values and respect the customary way of life. Cultural shifts towards natural resource stewardship, for example, will occur naturally but must be given time to evolve.

7. ***Focus on women for diversification of local economies:*** In most areas women are engaged in a wide range of economic activities including the processing of fish products, different kinds of handicraft production and other home based small production activities, small businesses and door to door sales. Alternatives that target women clearly hold critical importance for local economic diversification and increased household incomes in fisher communities and should constitute an important component of any community alternative livelihoods agenda.

8. ***Avoid replication and build upon past efforts:*** International organizations, government agencies, and NGOs have been very active in much of the region. Virtually all fisher communities have experiences with past projects and many are involved with current initiatives to promote local economic development. Regional cooperation and coordination among implementing organizations should be furthered to avoid duplication of past efforts in communities and to find ways of building upon existing experience and opportunities. Ongoing efforts should promote synergies among implementers and target audiences to maximize results from the investment of financial and other resources (Gorrez 2005).

9 ***Seek complementary partnerships:*** Currently, the alternative livelihood agenda in the MAR region is dominated by conservation based NGOs whose primary focus is to protect and conserve biological entities. As such, many of these organizations engage in community based livelihood development as a means of reducing pressure on overexploited

biological resources but not necessarily as a means of raising economic standards. From this standpoint, the conservation community is often ill equipped for the long term necessities of transitioning livelihoods, particularly from the business and development aspects. In this regard, community constituents would be better served through stronger and strategic alliances between conservation, humanitarian and development organizations in the region that, together, can achieve both natural resource and community development goals in the most appropriate way.

4.3 Five pillars of the alternative livelihoods strategy

1) community-based tourism development to channel benefits of regional tourism growth to fisher communities

Description.
The development of community based tourism in fisher villages should constitute one of the fundamental strategies to promote economic alternatives in fisher communities. The ripple effect of increased tourist visitation to villages can provide a wide range of opportunities for local economic diversification. Furthermore, the successful development of community based tourism in villages may be critical to stem the expansion of mass tourism into ecologically sensitive protected areas and protect traditional communities from the encroachment of large scale, commercial tourism development schemes (Merediz pers. comm.).

Community tourism refers in general to tourism activities that are developed, operated, and supported by local community members. Local communities should capture a significant share of revenues through coops, community associations, joint ventures, and local entrepreneurs, and tourism activities should respect and reinforce local cultural traditions and natural heritage. Community based tourism is not limited to ecotourism but can encompass a wide variety of tourism sub types including ethno tourism, agro tourism, adventure tourism, as well as history and nature tourism based on local opportunity.

Approach.
Fomenting community based tourism development will involve initiating a region wide systematic process of "bottom up" planning in local communities. Numerous types of learning based activities will be required including training, community exchanges, and local and regional workshops. The process will also require the involvement of a wide range of actors: local community organizations, local NGOs, donors and representatives from private sector tourism enterprises. Capacity building and planning will be oriented towards the goal of developing marketable and economically viable community tourism based offerings that will generate demand for goods and services in fisher villages and serve as the basis for alternative livelihoods.

Critical components of this process include: preparing communities; developing products and business plans; catalyzing collaboration with the private sector; identifying or developing financing mechanisms; providing skill development in key areas and monitoring impact.[64]

Preparing communities.
Communities need to be prepared to develop a vision for local tourism development that: will be in harmony with local goals and objectives; reinforce and capitalize on the local culture and heritage; elevate self determination and take into account potential trade offs and benefits; and profit from the past experiences of other community based tourism initiatives inside and outside of the region. A process for preparing communities should include the following:

Strengthening of community cultural identity:
Community based tourism should reinforce local cultural heritage and tourist activities should not contribute to excessive cultural erosion.

The culture and heritage of local communities is also an asset that should be used to attract tourists. Certain priority markets, particularly the European market, look for opportunities to experience unique local cultures. The Garifuna, Creole, ladino, mestizo and Mayan communities in the region all have unique cultural and heritage features that should be incorporated into local tourist offerings. The communities should also be engaged in a process through which tourism reinforces local values and heritage to minimize loss of indigenous identity and values and the folklorization of local cultures that often accompanies tourism.

Training and learning exchanges: Communities should be empowered to make decisions about local tourism development through an increased understanding of what tourism is, different options for local tourism development and potential positive and negative impacts. Many, if not most, of the villagers who are interested in developing local tourism have themselves never experienced what it is like to be a tourist. Exchange programs prove motivational and effective means of swapping information and experiences regarding benefits and challenges of different approaches.

Exchanges should take place between novice communities and communities with established community tourism projects.[4] Punta Allen has already collaborated in numerous exchange activities with fishers from Placencia and Monkey River in Belize and other communities from Honduras and Guatemala. Also in the MAR region, the Ak' Tenamit organization in Livingston has won an award for its guesthouse program in Plan Grande Quehueche. They also are currently training specialists in community based sustainable tourism with the capacity to provide technical support and are willing to share their expertise with communities in the region.

There is also extensive experience in the Peten region of Guatemala and in the interior of Belize with ecolodge development and ecotourism that could be beneficial for exchanges.

Establish a regional network for community-based tourism in the MAR region: A network or association of fisher community based tourism enterprises and associations in the MAR coastal region can stimulate the exchange of ideas and be used to develop transboundary circuits, support joint project development and promotional and marketing activities. The network could also establish a "brand label" to market and certify the authenticity of community based tourism projects in the region. Numerous examples exist that could serve as inspiration for such a network including the National Federation of Community Tourism (Federación Nacional de Turismo Comunitario) in Guatemala and the Redturs project[5]

Develop a product and a business plan. Detailed plans should be developed in a participatory fashion with the support of external experts in community tourism. Representatives of communities be incorporated in every stage to ensure learning and that local priorities are incorporated into the plans.

Business plan design should include the following key elements:

- A vision and goals for local tourism
- A proposal for local attractions and complementary activities
- Market feasibility studies and needs assessments.
- The establishment of yearly objectives
- The identification of marketing strategies for each attraction
- Budgetary costs
- Financial projections based on varying market scenarios
- The identification of potential funding sources

4 These exchanges may more effective if they take place between communities that share similar ethnicities and productive structures (e.g., fisher communities or agricultural communities) or at least similar languages, if possible.

5 See http://www.redturs.com/main.asp

The final product should be a detailed plan including market assessments, budgets and financial projections that will serve as the foundation for further support to communities to develop and expand tourism based alternatives.

Catalyze partnerships between private companies, non profits and communities Some NGOs in the MAR region have already recognized the need to complement training by generating demand through improved marketing and commercialization strategies. Amigos de Sian Ka'an has developed a proposal for commercialization of community products; TIDE has established an independent, for profit ecotourism agency called TIDE Tours; FUNDARY has helped develop a circuit and brochure to promote tourism in Punta de Manabique.

Despite the fact that these are positive steps in the right direction, experience shows that business development is generally not among the strengths of most non profit NGOs.[65] Collaboration and partnerships also should be catalyzed with private sector agents including local tour operators; resorts; hotels; cruise ship lines and business and guide associations. Many of these companies are looking to diversify the attractions that they offer to their clients and they can provide financing, training and marketing assistance to develop community based tourism products will be of mutual benefit if carefully negotiated.[66]

Develop financing mechanisms to support locally based tourism initiatives It is difficult to finance non traditional tourism initiatives through normal credit sources. Special financing mechanisms are needed to provide capital to support community tourism initiatives and individual local tourism entrepreneurs.

Provide specific skill development in key areas The community based plans will identify specific needs for local capacity building and training that will provide the basis for ongoing support to meet specific needs in areas such as guide training or administrative skills.

Include continuous monitoring of impact The business planning process should include the development of local baseline data on income, opinions, household economic activities and others that will allow for monitoring of the impact of tourism development activities. Local community organizations can be engaged in this process to ensure the transparency of the process, the local dissemination of the information and the transmission of methodology to locals.

2) Enhanced capacity for enterprise development and management in fishing villages to diversify local economies

Description.
In the absence of opportunities in the job market, community alternative livelihood strategies need to focus on local economic diversification through enhanced small enterprise development capacity in communities. The intrinsic diversity of small scale economic activities within communities in the region provides a broad set of opportunities depending on conditions in local markets. Capitalizing on natural business opportunities in local communities requires improved capacity in business related skills for the creation, administration and management of private and cooperative entrepreneurial ventures.

Approach.
Training: Practical applied training in marketing, administration and financial management for small businesses should be offered in fisher communities to existing small business owners, representatives from tourism cooperatives and budding tourism or other micro entrepreneurs. Workshops should provide hands on training in business planning, marketing, financing, record keeping and management by assisting participants to develop small business plans to either enhance their existing enterprises or create new businesses in their communities. The training should be conducted by individuals who have significant experience as small business entrepreneurs and managers.

Small business extension services or support centers: Consideration should be given to establishing small business support services in the region to provide ongoing entrepreneurial assistance in fishing villages. This could take the form of a small business extension service developed with local universities or through extension offices based in NGOs, small business incubators, or business support centers. Support service should be strategically located so that it is easily accessible to communities and provide guidance through business design, implementation, marketing and other areas needed to increase profitability.

Financing: Viable projects will require some level of capitalization through a grant, direct funding or micro loan. Financing programs could include a combination of seed grants, rotating funds, micro credit funds or other schemes. Whatever financing program is developed should take into account local opinion since local cultural and experiential particularities often exist related to loans, credit, and property.

3) Specialized training in fields that already provide supplementary income for fishers to promote increased access to income in those fields.

Description.
The occupational multiplicity of fishers and fisher households creates an opportunity to provide training to improve non fishing skills of fishers to promote increased earnings and greater devotion of time to supplementary activities.

Approach.
Training areas: The specific areas identified for training as described in Chapter 2 and 3 include the following: Tour guide specializations and certificate programs; certification and licensing in basic seamanship and water safety; apprenticeships for fly fishers; fly fish lure production; artesanal craftmaking; and skilled trades (carpentry for construction, furniture or detailing; engine and boat repair). However, it is recommended that fishers and household members in different communities be consulted in an ongoing fashion to gauge interest in specific areas of specialization and that training also be provided in areas of emerging opportunities.

Scholarships: In order to facilitate the movement of younger members of fisher families out of fishing and perhaps provide communities with access to highly specialized individuals in areas such as tourism or business administration, possibilities should be explored for the development of a scholarship program for selected fisher's children to pursue higher education in urban areas.

4) Technical and economic feasibility studies for new innovative activities to substitute/mitigate fishing and enhance community incomes.

Description.
In Chapter 2, a number of examples and ideas were provided regarding potential opportunities to develop projects that would provide alternatives to fishing. These included: processed seafood products; mangrove honey; small scale aquaculture; seaweed cultivation; grouper farming and conch mariculture. The viability of these ventures will depend on local natural resources, capacity and market conditions as well as appeal to fishers and compatibility with fisher lifestyles.

Activities.
These activities will involve extensive consultation with experts and the contracting of feasibility studies for technical and market viability. Initiatives that are already underway to foment seaweed mariculture in Belize should be monitored for the potential development of complementary activities or the expansion of seaweed production to other areas.

5) Research and monitoring to understand fisher livelihoods and improve adaptive project management

Description.
Alternative livelihood planning would be enhanced significantly by greater knowledge of

the livelihoods of fisher and fisher households in different areas in the MAR region. Furthermore, adaptive management requires ongoing monitoring and evaluation of project successes and failures.

Activities.

- As discussed in Chapter 3, key indicators need to be identified and monitoring procedures established to track the success of all alternative livelihood initiatives.

- Knowledge regarding local fishers and their families would be greatly enhanced by the application of a region wide socioeconomic and opinion survey of a representative sample of fisher households in the region or the application of a fisher census in platform site communities using the same methodology and questionnaire.

- Attract researchers in the social sciences to the area to carry out Masters, Ph.D. and postgraduate level studies in anthropology, sociology, and economics regarding local economies and fisher lifeways and survival strategies.

4.4 Community alternative livelihoods agenda

Using the five pillars as a foundation, the Community Alternative Livelihoods Agenda described in detail below consists of a four phase program to for key communities in the Platform Sites and Punta de Manabique. The four phases of the agenda are designed for careful and meticulous implementation over the span of five years and after gaining successes, can be expanded to include other fisher communities in the MAR region.

Phase 1: *Identification of Target Communities and Appropriate Strategies*. This phase will be focused on gaining a better understanding of which communities have the largest impact on the resources in the MAR region and what social and economic organization they have that make them favorable for working with to jointly implement an alternative livelihoods agenda. Phase 1 will also serve as the venue through which functional working relationships with target communities and complementary partners will be cultivated and existing relationships strengthened. Through these processes, the foundation for implementation will have been laid. The following outline the potential activities that could be carried out in Phase 1.

Activity 1: Identify Alternative Livelihoods Agenda Objective Based on the MAR Team's understanding of the resource status within the Platform Sites as well as the broader context nationally and internationally, overarching objectives should be developed to serve as the bases of determining success in the future.

Activity 2: Identify Target Communities. Using the objectives designed in Activity 1.0, specific criteria should be developed and used to help define the best set of communities to work with that are strongly associated with the MAR Platform Sites and Punta Manabique. The criteria may include such attributes as the largest fisher population, most fishery dependent, relative standard of living and comparative income. These target communities should also provide the unique opportunity to implement the agenda as well as possess several factors that indicate a positive and enabling environment for success.

Activity 3: Identify Appropriate Strategies. Using information from this study, the socio economic report and model (being developed) as well as local knowledge of the communities, an approach can be developed to engage the target communities in the most appropriate and sensitive manner. After a period of socialization and building of trust,

target communities can be engaged in structured processes to produce strategic interventions based on the Five Pillars. Before agreeing on strategies, however, the communities must be engaged to agree upon finer scale goals and objectives based on the community aspirations as well as the goals of the alternative livelihoods agenda. Once community level goals have been set, then the most appropriate strategies derived from the Five Pillars can be agreed upon. Strategies are not mutually exclusive so that it is likely that a combination of strategies will be necessary to implement as complementary and parallel processes. Intrinsic to this process is the identification of the specific groups of community members towards whom these strategies are oriented. The intended livelihoods audience is identified by both project and community level goals as well as an in depth understanding of the values and culture of the target communities.

Activity 4: Develop an Implementation Plan. Together with the communities, develop a detailed plan for implementing priority and agreed upon alternative livelihood strategies. The implementation plan should articulate both broad and fine scales goals, how these integrate with community goals and how the strategies will be implemented to achieve those goals. Within the planning stage it is critical to establish responsibility and accountability with the appropriate entity be it TNC, its partners or the communities themselves. The budgetary costs of implementation should also be detailed and can be used as the basis of fundraising efforts.

Activity 5: Establish a Success Monitoring Plan. Another important aspect in the implementation plan is the articulation of incremental benchmarks used to determine progress made toward achieving goals as well as the inclusion of an overall monitoring plan that will indicate if goals and objectives have been successfully met. Baseline values for pre project social, economic, cultural measures can be derived from this and other reports. If necessary, specially designed rapid surveys can be carried out to establish conditions prior to the project. Targeted surveys can then be conducted to periodically assess ongoing project impacts (both positive and negative).

Activity 6: Begin to Secure Partnerships. In this stage, potential implementation partners from complementary fields such as community development and other social economic focused organizations are identified and secured to participate in program implementation as partners in sustainable alternative livelihoods. Seeking support and technical knowledge from other humanitarian and development based organizations will ensure that conservation biases are kept in check and alternative livelihood approaches are vetted by development experts. Sharing responsibilities with partners may also be an effective means of sharing the financial cost of implementation.

Phase 2: Year 2 *Establishment of Community-driven Alternative Livelihood Strategies.* Phase 2 is comprised of activities necessary in the first stages of program implementation and more directly draws upon the Five Pillars of Alternative Livelihoods development. In this phase, MAR and Partner Teams will work with communities on transforming the alternative livelihood strategies into viable product generation activities. Teams will work very

closely with key community members to conceptualize and document how the strategies will function within their own setting. This process will build their skills in basic business development and management as well as lay the groundwork for alternative skills training. Phase 2 is critical for engaging the communities in an in depth manner that can influence their choices in the future. The timeframe allocation for Phase 2 can be shorter or longer than one year depending largely on the time and capacity of key players including the MAR and Partner Team members. If this work is carried out by a focused community development partner (e.g. RARE, SNV), then it is more likely that it can be carried out faster and more efficiently. Relying on the MAR Team and its conservation NGO partners alone may cause delays given the multiplicity of responsibilities of team members who will not be able to completely focus on this project for a long period of time. These delays can be perilous to the program as the attention span of communities is very short and momentum may be lost which then increases the amount of resources and energy necessary to revive the process later on.

Activity 1: Alternative Livelihood Strategy Conceptualization. Here the MAR Team and/or its Partners will conduct a series of highly structured dialogues with the community target audience to operationalize the specific alternative livelihoods strategies developed in the first phase. These dialogues must be substantiated by real information on the economic potential of these strategies in the existing marketplace, understanding the competitive landscape and how the strategies can be made into viable alternatives over the long term. Depending on the strategies chosen, this activity could include the implementation of learning workshops on business plan development, enterprise management as well as financial management and accountability. These learning modules will set the stage for future activities that will include business and strategic planning as well as implementing startup activities.

Activity 2: Business Plan Development/Skill Enhancement Planning. This activity involves the development of viable business plans with the targeted community members that articulates basic elements such as the product offering and how it will be generated, the competitive advantage of the project, the management structure of the proposed business activity and financial projections. Such a plan need not be long and tedious, however, if livelihood alternatives are designed to be meaningful in the long term, then, due diligence must be given to these plans. At this stage, it may be possible for business enterprise startup activities to be implemented involving the consolidation of the different learning activities to set up the business. For skills enhancement type strategies, this process could involve a strategic planning process that identifies not only how and when the training will take place but also how community members trained in new skills or have enhanced skills will successfully compete in the relevant market through appropriate job placement strategies. Post training activities are key elements to maintaining community interest and demonstrating results that in turn gain credibility within the community, thereby potentially increasing the level of interest of other community members or neighboring communities.

Activity 3: Implementation of Skills Enhancement or Development Training. Specific activities involving skills training can be implemented based upon the readiness of the constituents and the labor demand in the marketplace. If the demand for certain skills is clearly demonstrated within this timeframe, such as the immediate need for qualified divemasters in Placencia, then this opportunity should be taken advantage of. However, this must be done thoughtfully and long range contingencies, post training follow up and job placement strategies should not be sacrificed for opportunity.

Activity 4: Refinement of Monitoring Parameters. As new life is breathed into the alternative livelihood strategies at this stage, it is important to revisit the success benchmarks and indicators developed in Phase 1. These success indicators can be revised and refined based on the detailed concepts designed through Activities 1 to 3.

Activity 5: Fundraising. At this stage, the financial requirement of implementation inclusive of business plan investments, training costs, long term trainee support etc. should be identified. Based on funding needs, appropriate sources of financial support should be identified and approached. In addition to traditional grant funding and private donor support, long term sources such as venture capital funds, small enterprise funding (TNC's EcoEmpresas Program) and microloans should be explored and secured for the following implementation years.

Phase 3: *Year 3-4 Implementation of Community-based Alternative Livelihoods Strategies.* This Phase will involve the execution of all the strategic alternative livelihoods concepts and plans generated in Phase 2. This phase will require consistent effort from the MAR and Partner Team in order to build on the successes and momentum of the first two phases. Specific activities are not articulated here as they are dependent on the strategies that have yet to be chosen but also that must be developed by the communities themselves. However, it is envisioned that in this phase, the business plans will be undertaken and community members will be mobilized to generate, market and sell goods and services. For other strategies, training components and skills enhancement activities will take place as well as the implementation of job placement strategies to help ensure the success of trainees in the workforce.

Phase 4: *Year 5 Adaptive Management*. Using the monitoring program developed in the previous phases, monitoring should be conducted to determine if both program and community goals and objectives have been achieved. Monitoring data should help gauge the impacts of the alternative livelihoods on the communities and on the marine resources from which extraction pressure was being rechanneled through the alternative strategies.

Activity 1: Direct Monitoring of Program Success. Data from target community members will be gathered to determine whether business and training goals were met. Some basic monitoring parameters could include profitability of the business and whether or not financial expectations are being met, number of trainees that have successfully found work in other industries outside of marine resource extraction, changes in income as a result of these alternative livelihoods, changes in the community that can be attributed to the alternative livelihoods program intervention.

Activity 2: Analysis and Interpretation of Monitoring Information. The information gathered in the previous activity should be analyzed holistically and compared with the baseline values that were set at the beginning of the program. Analysis results can then be interpreted based on the level of achievement of the various goals and objectives that were set both for the program itself but also for the communities. Through this interpretive process, strategies can then be evaluated and adapted, adjusted or discarded based on a determined level of success. Useful lessons learned and best practices should be derived from this process from which other programs can learn. Moreover, holistic analysis and interpretation of the data will allow assumptions regarding community values, social norms, economic standing, standards of living and market trends used in Phases 1 and 2 to be revisited and updated. These assumptions are critical to maintain throughout the lifespan of the program to distill the enabling conditions that led to success.

Activity 3: Impacts of Livelihoods Strategies on Marine Resources. Alternative livelihoods monitoring results should then be cross reference with biological monitoring data to determine the impacts of livelihoods transition on marine resources, if any. If the program is designed to transition fishers out of the fishing industry to reduce pressure on marine resources, then a reduction can be indicated by a decrease in number of fishers, a decrease in time devoted to fishing or a decrease in income derived from fishing activities with a corresponding increase in income generated from other activities. The correlation between various socio econ and biological parameters can be established over time.

Activity 4: Community Reporting. In addition to usual program reporting, a strategy for reporting results from the last five years of effort should be formally disclosed to target communities. This could be in the form of a series of community meetings in which monitoring findings (i.e. data, analysis and interpretation) are discussed with appropriate community members. It will be equally critical to discuss the implications of the monitoring results on the alternative livelihoods strategies and solicit input from the communities themselves. This activity will not only continue to build trust among community constituents but it also provides a formal venue through which community stakeholders can voice opinions, suggestions and concerns regarding the program or any aspect of its implementation. This feedback process also reinforces and continues to instill the value of community ownership of the alternative livelihoods program.

4.5 Specific opportunities for immediate implementation

To ensure the systematic implementation of community alternative livelihoods strategies, it is recommended that community livelihoods programs begin with the process focused implementation of activities as detailed in Phase 1 of the Community Livelihoods Agenda. However, Table 4.1 also provides a summary of specific activities that present immediate opportunities to support alternative livelihoods in the platform site communities. To improve chances for success, the implementation of these activities should take into account the essential elements of success detailed in section 4.1 of this Chapter as well as the approaches provided under the Five Pillars.

Table 18
Immediate Opportunities for Implementation of Alternative Livelihood Activities in Platform Site Communities

General objective	Activities	Methodological considerations	Target communities/ Stakeholders
Prepare communities and enhance products for community-based tourism Pillar 1	Practical courses with local tourism stakeholders and leaders to develop cultural-heritage based tourism products and attractions to market to tourists.	Some communities already have developed cultural-heritage based products (e.g. Hopkins, Nueva Armenia) Enhance the quality of existing activities and identify unexploited possibilities. The process should also contribute to the reinforcement of local cultural heritage.	Hopkins; Monkey River; Estela Lagarto; Punta de Manabique; Santa Isabel; Chachaguate/ Nueva Armenia; Rio Esteban/ East End
	Experiential exchanges to broaden local vision and experience with community-based tourism.	Include local community-tourism leaders and entrepreneurs and let them have the experience of being a tourist. Exchanges/visits to communities with functioning community-based tourism initiatives within or outside of the region as appropriate (the receiving communities will have to be carefully selected). Before and after exchange, include process to clarify and reinforce local vision for community-based tourism.	Hopkins; Monkey River; Estela Lagarto; Punta de Manabique; Santa Isabel; Chachaguate/ Nueva Armenia; Rio Esteban/ East End
	Training in home-based production of crafts and souvenirs targeted towards tourists.	Identify and target existing artisans, interested fishers and female members of fisher families. Identify the most appropriate crafts and souvenirs that can be produced locally and provide training to ensure quality. Include training in small business management, sales techniques and marketing strategies.	Punta Allen and Punta Herrero in Sian Ka'an, Punta de Manabique; and Monkey River; will need to identify potential products. In Chachaguate/Nueva Armenia; Rio Esteban/East End will be able to work with existing artisans to reinforce product quality, uniqueness and commercialization strategies.
Prepare communities and enhance products for community-based tourism (continued)	Complementary training to enhance ability of past ecotourism guide trainees and existing fisher guides to obtain employment and income in tourism.	1. Training in customer relations and customer service for tour guides; 2. Facilitate mentorship experiences for fly fishing trainees. Will need to contact established fly fishers and fishing lodges to set up mentorship experiences.	For #1, offer to all past trainees and fisher guides in platform sites. For #2, conduct a pilot project with unemployed or underemployed fly fishing trainees in the Gladden Spit communities.
	Training in marketing and sales techniques for community-based tourism and ecotourism products.	Fortify local tourism associations by targeting two or three qualified male or female members from each community for the training who can provide ongoing advice and training to other members of the associations. Candidates should be selected by local associations in consultation with training provider to ensure they have needed qualifications.	Tourism cooperative in Punta Herrero; Village Council in Hopkins; Tourism association in Monkey River; Community Development Councils (Cocodes) in three Punta de Manabique communities; Village board of trustees (Patronato) or tourism Chambers of Commerce in Cayos Cochinos communities.

General objective	Activities	Methodological considerations	Target communities/ Stakeholders
Enhanced capacity for enterprise development and management in fishing villages to diversify local economies Pillar 2	Practical general microenterprise development/management and sales/marketing training courses.	Offer to potential fisher/ecotourism entrepreneurs as well as to women micro-entrepreneurs in communities. As described above, the courses ideally would be accompanied by a mechanism to provide sources of funding for business plans that show promise of success as well as follow-up services.	All platform site communities
Specialized training in fields that already provide supplementary income for fishers to promote increased access to income in those fields Pillar 3	Training fishers to enhance their skills in carpentry, masonry, engine and boat repair.	Ask partners to conduct rapid survey of fishers in their respective areas to gauge interest of fishers in specific trades and areas of specialization.	Fishers in all platform site communities.
Technical and economic feasibility studies for new innovative activities to substitute/mitigate fishing and enhance community incomes. Pillar 4	Develop activities to complement existing fisher seaweed farming activities in Belize and expand seaweed production to other areas.	First investigate existing seaweed farming programs in Belize to gauge success and possibilities of transfer to other areas in the MAR region.	Hopkins, Monkey River, Placencia and others depending on economic and technical feasibility.
Research and monitoring to understand fisher livelihoods and improve adaptive project management Pillar 5	Application of a region-wide socioeconomic and opinion survey of fisher households.	Will address a critical gap in knowledge regarding fisher household economic behavior, types of fishers in the MAR region. Select either a representative sample of fisher households in the region or apply of a fisher census in platform site communities.	Engage local partners to coordinate with fisher cooperatives and associations, universities and researchers to apply the survey locally.

NOTES

1 Population density in the coastal municipalities as a whole remains relatively low (26.71 individuals per km2). The majority of the population in the coastal municipalities (75%) is concentrated in towns and cities that would be classified as urban according to national standards of the different countries.

2 Another indicator of the high immigration driving population growth in those areas is the fact that in Benito Juarez only 28% of those interviewed in the 2000 Mexico census reported having been born in Quintana Roo and in Solidaridad the figure was 32%. The only municipalities outside of Mexico in which 50% or more of the population consists of immigrants are Roatan and Utila in the Bay Islands of Honduras, another area of intense recent tourism growth.

3 For example, the average HDI for the Honduran municipalities (.708) is slightly higher than the country as a whole for 2003 (.667) whereas the Quintana Roo municipalities display an average slightly lower than the Mexican index (.803 vs .814 for the country in 2003).

4 Comparison of municipal level economic indicators is impeded by information gaps and the different standards and classification systems used to define labor participation and occupational categories.

5 For example, tourism is responsible for up to 90% of all economic activity in the municipality of Cozumel (Ayuntamiento Municipal 2005).

6 Izabal, Guatemala had 54 hotels and 1268 rooms representing 7.1% of national capacity in 2004 and an average monthly occupation rate of 44.8% in the first three months of 2005

7 Cruise tourism is relatively inexpensive and people don't want to spend more than US $30 or $40 for tours. At the same time, they expect a high level of service. A cruise ship may have 2000 passengers and of those 1000 or more may come off the boat.

8 Taken from Municipal website found at (http://www.qroo.gob.mx/qroo/Estado/Felipe.php#5)

9 For example, there are 7000 farmers involved in the sugar industry in different levels. The cane cutters are family members of the farmers but also they use Mexicans and Guatemalan migrant laborers. Of approximately 90 million BZ earned in foreign exchange in sugar, perhaps 60 million is divided amongst the farmers and 30 million goes to the industries. In the north there is also livestock production, and grain producing corn, beans and rice) (Vasquez pers. comm.).

10 Citrus production revolves around farmer associations. Citrus involves many small farmers but also some very large plantations those are owned by the individuals/companies that started the industry in the 1930s and 40s. Oranges are ripped from the end of November to the end of May. Migrant workers from Honduras and Guatemala are the ones who perform the harvesting.

11 The bananas are sold in Europe by Fyffes, which has its office in Ireland. Belize bananas reportedly fetch premium prices in Europe to sell the bananas the farm must be certified as having been produced without child labor and with corporate responsibility. Bananas production appears to be in an growth phase. The Big Creek port is being expanded for the shipping of bananas (Vasquez pers. comm.).

12 Cacao, is marketed in England by Cadbury (organic cacao called, apparently, green gold in Europe for the production of special chocolates).

13 The village of Sarteneja is the major area from which Belizean fishers come. Many leave their boats in Belize City (under Swing Bridge). The Sarteneja fishers fish all along the coast including in the south where larger boats serve as the base for free divers for lobster and conch. The Sarteneja fishers sell primarily to the Northern Coop in Belize City. Northern also has a receiving plant in Independence (Mejil pers. comm.).

14 Arc Maya, the northernmost entrance to the reserve and point of departure to Punta Allen, the visitors center and the fishing lodges, received 71% of these visitors. Muyil received 12% and the Pulticub entrance which leads to Punta Herrero received 5%. The majority of visitors were European although there are also significant numbers of visitors from the US. Forty percent of Mexican tourists visit during Holy Week.

15 **Ejidos adjacent to Sian Ka'an and approximate number of inhabitants**

Community	Population
José Maria Pino Suárez	150 inhabitants
Chunyaxche	100 inhabitants
Tres Reyes	130 inhabitants
Felipe Carrillo Puerto	17000 inhabitants
Chanca Veracruz	400 inhabitants
Andrés Quintana Roo	300 inhabitants
Limones	2000 inhabitants
Villa Cortés	50 inhabitants
Chumpón	650 inhabitants
Cecilio Chi	60 inhabitants
Tulum	8000 inhabitants
Punta Allen	800 inhabitants
X-Hazil	n/a

Source: List courtesy of Eulogio Puc from CONANP

16 Punta Allen and Punta Herrero are the two coastal communities visited by the consultant and are the focus of this assessment. The consultant also visited the Mayan village of Muyil which is the only of the terrestrial communities that has developed significant ecotourism activities. These terrestrial ejidos are dominated by Mayan populations that traditionally lived off small scale farming (milpas), hunting and rubber tapping (chicleros) with only small scale interaction with markets. Currently, however, these communities provide labor for the hotels in the Riviera Maya the hotels send a bus to pick up and return the workers daily to their communities (approximately 1 hour trip each way). The tourism has increased the need for cash in the communities as they adopt a more materialistic lifestyle (Caamal pers. comm.).

17 Although lobster remains the economic mainstay of Punta Allen, tourism is already entrenched within the local economy of the village and represents a significant source of local income. In 2002 3, for example, the community received a total of 11,623 visitors (Solares Leal and Alvarez Gil 2003). Most fishers in Punta Allen have altogether abandoned commercial fishing for scaly fish (*escama*). There are also a significant number of non fishers in the community devoted exclusively to tourism. These include tourism cooperative members and non member freelance licensed guides who work for cooperative members. Fishers report that tourist guiding activities take place in the season that was previously devoted to fishing for finfish, an activity that carries higher economic risks and that is significantly less lucrative than lobster fishing.

18 Punta Allen has already achieved significant advances in developing locally based eco tourism. Muyil and Punta Herrero also have received training and established tourism cooperatives to capture and distribute the benefits of local tourist visitation. All of the communities in Sian Ka'an but especially Punta Allen display significant advantages over communities in other areas of the MAR for the development of community based ecotourism. These include the following:

Support from the authorities: CONANP has actively supported low intensity tourism development in communities surrounding Sian Ka'an. They were involved in organizing the first cooperatives in Punta Allen and Muyil and have offered or channeled significant assistance in the form of training and other kinds of support to assist the communities in the process. To date, the focus and primary benefits of these efforts have accrued to Punta Allen.

CONANP effectively regulates tourism in the reserve to ensure that benefits accrue primarily to the local residents. Tourism guide licenses are limited to individuals from communities in the area of influence of the reserve. All external tourism operators are required to work with local guides. CONANP has provided authorization to eight private ecotourism companies to operate in the reserve but these are all owned in whole or in part by individuals from local communities. CONANP also provides annual training to tour guides, required to keep their licenses updated. The Board of Trustees for the protected area also regulates the number of boats that are authorized to offer tourism services.

Access to credit and capital: Every tourism cooperative member in Punta Allen has at least one boat that is authorized exclusively for use in tourist activities in the Reserve. This represents a significant outlay of capital by individuals in the community. Members of the Vigía Chico Fishing Cooperative in Punta Allen have been able to move profits generated from lobster fishing into equipment required for fly fishing and eco adventure tours (snorkeling and bay trips). Also many have been able to access significant credit through the Cooperativist Federation of Quintana Roo which receives significant economic support from the Mexican Federal Government (Merediz pers comm.) Furthermore, Punta Allen has benefited from its proximity to the mass tourism destinations from the north and received considerable assistance from international organizations over the past 15 years. Most recently UNDP's COMPACT Project provided funding to support the replacement of boat engines in Punta Allen to more environmentally friendly four cycle engines. The UNDP and others have also provided funding to Punta Herrero and Muyil to support ecotourism development in those communities, but eco toursim in these villages and especially Punta Herrero is significantly less developed than in Punta Allen.

Marketing: Especially the cooperatives in Punta Allen are making special efforts to conduct direct marketing efforts to circumvent the intermediation of lodges and large tour organizers. Different marketing approaches are being attempted. In 2004 the RARE organization supported the formation of an alliance of four tourism cooperatives from Muyil and Punta Allen. The alliance, called Community Tours of Sian Ka'an, established a centralized office in Tulum for the participating cooperatives, developed an offering of tours and established a website for direct marketing (http://www.siankaantours.org/). Although this initiative apparently is not yet self sustainable and the long term success is still in question due to the fact that funding is about to expire, the Tourism Cooperatives in the region have obtained significant experience with marketing, product development and other areas that could prove useful in the future.

19 Not all of the members of the cooperative are owners of *campos*. These work as *chalanes* assistants to campo owners. On the other hand, there are a number of cooperative members who own multiple campos.

20 The sale is not of the campo *per se* but of the access rights and the shades that are located within the campo.

21 There are only four fishers whose families reside with them in Punta Herrero. The families of all of the other fishers reside in Chetumal. The fact that the community is so heavily dominated by

males, and that they do not have the distractions and social controls imposed by wives and children, may be the reason that the population has a reputation of heavy drinking and rowdy behavior in contrast to the more "serious and religious" people of Punta Allen.

22 The 2000 Census only reported a total population of 23 males and 8 females in 12 occupied households. Twenty five of the individuals censused were over the age of 15 and 19 were economically active. However the regular population appears a bit larger than this. Probably most of the fishers were censused in Chetumal at the location of their primary domicile.

23 This assumes a constant growth rate of 3.76%, the same rate recorded for the communities in the 1991 2000 intercensal period.

24 Economic trends in the communities since the early 1990s include a strong movement of individuals away from own account economic activities into private sector paid positions. Furthermore, there has been a movement away from employment in the agriculture /forestry/fishing sector and an increase in employment in services and crafts related occupations between 1991 and 2000. The first trend appears to be related primarily to abandonment of agricultural activities although there also may have been a slight decline in fishing as a main occupation during the period. The second trend is likely related to a diversification of the local economy as a result of tourist expansion during the period. Employment in the service sector appears primarily related to tourist (hotel, restaurant and guide) jobs and greatly favors women. Furthermore, the economic participation of women in has increased dramatically in the last 15 years in all occupational categories but especially in work as "service workers and shop sales workers" and in small business ownership.

25 Between 1999 and 2003, Stann Creek and Placencia report growth of employment in hotels at a higher than national average with 70.5% and 51.6% respectively. Employment in hotels has increased at a national rate of 34.1% over the 5 year period between 1999 and 2003. From 1991 to 2000 there was a reported increase in service workers and shop sales workers in Hopkins from 3.2% to 25.3%.

26 This was established when attempting to gauge numbers of fishers per community for the 2004 Fishers Survey conducted by FON. For example, the 2000 census reported the same number of fishers (30) as the number identified by the Hopkins Survey team in the community in 2004.

27 The only data found to approximate contribution of fishing to the local economy is the 2000 census data on annual income for working people over 15 years of age. This data indicates that in 2000 the income reported by fishers/fish processors constituted between 7.9 and 10.4% of all reported income earned in GSSCMR communities in the 2000 census. But it should be noted that the income reported by fishers is only related in part to fishing activities, so the income figures do not correspond to the overall economic importance of fishing to local households.

28 The communities surrounding GSSCMR display the most rapid growth in Belize in a number of growth indicators. For example:

- Since 1992, the Stann Creek area (including Dangriga and Hopkins) has displayed the highest percentage growth in tourist beds of any tourist area in the country with a total growth of 360%. The Placencia area was second in growth with 297%. These compare to a national growth rate of 72.2%. From 2000 to 2004 the number of beds increased by 20% in Stann Creek and 44.7% in Placencia despite the destructive effects of Hurricane Isis in 2002.

- Based on conservative occupation estimates, the total number of hotel bed nights per year (2003) in Stann Creek was 109,500 and in Placencia was 99,718, representing an increase of 91% and 69.5% respectively over visitation in 1999. At an average of 7 nights overnight stay per tourist, which has been cited as the Belizean average, Stann Creek would have received 15,642 tourists (average of 43 tourists a day) and Placencia 14,245 (average of 39 tourists a day). At an average per day expenditure of US$100 per day per tourist (national average calculated by BTB), the total direct value of tourism to the local economy of Stann Creek in 2003 would have been US$10,950,000 and to Placencia of US$9,971,000.

29 Lobstering with scuba is standard in the area. The fishers in Rio Esteban say that there are two reasons for this. First of all, there are high levels of thievery from traps which has discouraged their use. Second, lobster fishing is now restricted in the shallower lobster banks within the protected area that used to be accessible through free diving. The lobster banks to which they now have to access are farther away from the community and longer and deeper than the ones in the protected area and need to be accessed using tanks.

30 The consultant noted a clear contrast in the aspirations of fishers, for example, with those of farmers in the highlands of the Dominican Republic who will clearly state that farming is no longer an economically viable activity and will make significant efforts to move their male and female children out of rural areas and into cities where they have a chance to establish a non farming existence (e.g. McPherson and Schwartz 2001).

31 It should also be noted that there are areas where fishers view tourist development with trepidation. This was found particularly in the Garifuna communities of Cayos Cochinos where fishers expressed fear that a focus on tourism would generate increasing pressures to restrict fishing activities. This area also appears to the one in which fishers have been most severely affected by restrictions imposed by the declaration of the protected area.

32 Membership in the cooperatives provides advantages over freelancing because they provide services to their members such as group rates for insurance; the facilitation of permits and marketing. There are also a series of permits that all tourist boats and fishers in the reserve need to have some of which may be facilitated through the cooperative: Permiso de Capitania de Puerto (this is paid for by the cooperative); Permiso de SAGARPA (Secretaria Agricultura y Pesca) to fish; Permit by SEMARNAP (Environmental Secretariat) to provide tourist services.

33 In Punta Allen there is less capacity and a steadier demand for fly fishing tours than other eco tours due to the specialized nature of the service. The cooperatives reported the ability to offer 14 fly fishing expeditions a day and a nominal demand of 10 12 expeditions a day, representing 60 to 80% of capacity. Fly fishing specialists work regularly because local clubs and fishing lodges, which receive a steady influx of sport fishers during the season, contract the cooperative's fly fishing guides. Fly fishing tours are off the rolls due to the fact that clients request specific guides based on a recommendations or past experience. Nevertheless, the fly fishers pay their 10% per trip quota to the Cooperatives in order to reap the benefits of membership, including appearing on the eco/adventure tour rolls.

34 Although visitation remains very low, the cooperative reports that at times they do not have sufficient equipment to meet demand. Demand does not appear to be sufficient as of yet, however, for the fishers or the cooperative to have sufficient incentive to access local credit options to purchase equipment.

35 The consultant did not visit northern Belize or San Pedro. However, according to informants significant efforts are currently underway in the fishing village of Sarteneja to develop community based ecotourism as an alternative to fishing (Appendix III). A very significant number of guides have been trained the Sarteneja area by Green Reef and other organizations. However there is as yet low demand due to infrastructure problems primarily the access road to Sarteneja. Some of the trained divers from Sarteneja have reportedly migrated to Belize City to work with the cruise lines. In San Pedro, many fishers have made some transition into working in tourism but most also continue to fish for lobster and perhaps other species.

36 There are reportedly 76 certified tour guides in Hopkins and approximately 50 that are active. These tour guides are affiliated with the Dangriga Tourism Association. About 50% of active tour guides work full time through the resorts. In Monkey River there are reportedly 30 35 guides with 50% working on a consistent basis providing Monkey River tours (10 guides) and fly fishing (5). In the Placencia Tourism Association there are reportedly 176 licensed tour guides, all are Belizean and most are local.

37 Six farm out all of the tours they offer to other operators.

38 Coastal tourism and cruise ship tourism also acts as a hook for terrestrial tourism up rivers to Maya ruins and jungle tours.

39 The main tours provided to tourists are Quiriguam, Rio Dulce, Rainforest, City Tours, Amatique Bay, Green Bay, Livingston, Playa Blanca. All the guides have to be bilingual and they should have a license (currently it appears there are some guides working that don't have a license). The 35 guides reportedly work on a consistent basis. The most popular tour amongst cruise ship visitors is the City Tour (low price plays a factor in the popularity of this tour) followed by the Rio Dulce/Livingston and Quiriguam tours.

40 In Guatemala, a professional guide needs a license based on a one year training course broken into a series of month long training modules. The training is provided by different institutions but INGUAT does the evaluation and authorizes the license. Informants report that the training curriculum is very comprehensive and includes training in tourism services, nature and cultural interpretation, basic English language training and others. The course is not accessible to most individuals from Punta de Manabique communities as a result of the time, cost and educational level involved in taking the training.

41 According to a representative from FUNDARY, no individuals in the Amatique Bay area are recognized as specialized fly fishers. Furthermore, no tour operators promote fly fishing in the region. The Amatique Bay Resort would occasionally subcontract FUNDARY to conduct fly fishing tours because they were the only local organization with the appropriate type of boat and knowledge of the area to provide the tours (Mechel pers. Comm.)

42 The primary handicrafts production areas in Quintana Roo are identified in the following website: http://artesaniasqr.qroo.gob.mx/

43 For an example of Garifuna/Placencia dolls see: http://www.destinationsbelize.com/dolls.htm

44 For example, in the Dominican Republic the sale of bottles of *mamajuana*, similar to *gifiti*, is widespread and can be found in virtually every souvenir shop and tourist market in the country. The bottles are most commonly sold prepared with spices and leaves but the purchaser must add the rum.

45 **Local tourist oriented businesses in Hopkins village include the following:**

Small Locally Owned Hotels in Hopkins

Name	Price	Capacity
Howard's Inn	$60 BZ	4 rooms
Look to the East	$25 BZ	6 rooms (2 family and 4 single)
Wabato	$45 BZ	3 rooms
Heartland Inn		2 rooms, foreigners only
Caribbean View	$25 BZ	6 rooms
Ransoms Cabanas	$20 BZ	4 (family room and 3 singles)
Hopkins Inn (foreign owned)	$60 US	8 rooms
Tanie's House	$26.75 BZ	3
Seagulls Guest House		4
Whistling Seas		5
All Seasons		2
Totals Small Inns		47 (capacity @100 tourists)

Other tourist related locally owned small businesses in the community

Name	Type of Business
Bel a Bea	Pizza restaurants
Lebeha	Drumming center and offer breakfast/lunch/dinner. Give classes for tourists to learn to play drums.
Dats Place	Restaurant
La Runihati	Restaurant
King Cassava	Located at entrance to town. Restaurant, also arranges tours and taxi service
Harbour House Internet Café	Provide Internet, burn CDs
Monica's Place	Restaurant
Hopkins Internet	Faxing/Internet service
Inmingo Restaurant	Restaurant
Culture Gift Shop	Sell items made by local artisans as well as other touristy knick knacks.
Tina's Place	Pizzeria, pastries, bicycles
Watering Hole Restaurant	B.L. Dinner, fishing tours, pool table
Hopkins Laundry Service	Laundry
All Seasons	Not only hotel but rents scooters

46 This would require modifications to existing protected area regulations that do not permit extraction of wood products for purposes other than household use. However, CONAP in Guatemala has to date "looked the other way" regarding the commercial production of charcoal and are in the process of drafting regulations that would permit the making of charcoal for commercial purposes through sustainably harvested plots. Similar allowances could perhaps be made for the sustainable production of other wood products.

47 In Nueva Armenia, two businesses were funded. A group of women received money to purchase a freezer to make ice to sell to fishermen. Sales are slow, there are internal conflicts within the group and energy costs are prohibitive, and this business is failing. Seed money and training was also provided to a group of intermediaries who purchase fish. The primary partner of this venture said he was already making money before receiving the training but that the seed money allowed them to purchase a freezer without having to access bank credit and he is anxious to receive more "free money" from any project that will provide it..

48 They want to expand they operations to by pass the intermediaries and sell smoked fish, fresh fish and fish fillet in the market. They would also like to compete with the local intermediaries and become a major purchaser of fish in the Manabique peninsula.

49 Prices can reportedly drop from a normal 20 quetzales for a 35 pound sack to as low as 3 quetzales a sack.

50 In the supermarkets of Santo Domingo, Dominican Republic there is a charcoal sold in stores called *Carbón Ecológico* (Ecological Charcoal) that is produced using sustainable methods and with increased benefits for producers. A similar scheme that includes local packaging and an "ecological" branding to enhance value of the charcoal could be considered for Punta de Manabique.

51 This report specified conducting an evaluation of TNC sponsored training programs and comparing those results to the impact of similar programs conducted by other organizations in the region. However, the sponsoring organizations and NGOs that implemented the training programs, have failed to keep complete records of numbers of individuals trained and have not established any baseline or follow up procedures to monitor program impact. Trainee numbers therefore had to be reconstructed based on interviews with implementing organizations and fishers, news articles, and partial lists provided by implementing organizations.

The evaluation of the impact of training is based on focus groups and interviews with a relatively small sample of participants and interviews with program sponsors and implementers. The interviews were used to gather information on trainees' past and current activities. The information reported is therefore based in part on informant recall as opposed to a direct survey or census of trainees. Although the information obtained is sufficient to make some reasonably confident observations about amount, type and impact of training to date in the southern part of the MAR it should not be construed as a statistically representative evaluation of training impact. The recomendation in this case is that a well structured random survey or census of all training participants to date be developed and applied to use the information make adjustments before any future training is embarked upon.

52 On the other hand, in its Annual Work Plan (July 2005) MBRS reported having trained a total of 165 individuals in diving, snorkeling, kayaking, nature guiding, and recreational fishing. This number does not correspond

with the numbers provided by the NGOs that implemented the training.

53 An MBRS Mid Term Review Report (March 2004) recommended that the goal of "35% of fishers trained in alternative livelihoods derive at least 50% of their incomes from an alternative assuming there is a market for this kind of tourism" be adopted, although it is unknown whether this objective was officially accepted. Furthermore the qualifying statement at the end of the goal relieves MBRS of all responsibility of ensuring that the training they provide actually conforms to a pre existing or potential demand for services and therefore employment possibilities, rendering the indicator useless as a measure of success of the training project. The GEF SGP displays broader objectives: aid in the sustainable development of the Toledo District through training and capacity building to ensure residents have the opportunity to participate in successful non extractive enterprises.

54 Nevertheless representatives of TIDE justified recruitment of non fishers by stating that young people and females in the family also play a role in exploitation of marine resources: women and kids do fishing off shore and there are a few women who also go to sea. E.g. In Punta Negra there are women driving boats, catching and handling fish but not diving.

55 TIDE informants reported that in the Punta Gorda area there are approximately 12 individuals who are making a good living as tour guides. The majority of these guides were trained in 1999 2000 by Orvis Fly Fishing. These guides are all former fishers and work for or have strong connections to the El Pescador Punta Gorda resort. Not only do they work as fly fishers but they also provide other free lance or resort based guide services such as charter trips to the Sapodilla Cayes and snorkeling. This original group of now experienced and well equipped guides reportedly monopolizes the demand for guides in the Punta Gorda area.

56 No specific information was obtained regarding the employment status of eighteen Guatemalans who were trained in diving and fly fishing by TIDE/MBRS. However, it is unlikely that these are working in their field of training on a consistent basis due to the lack of dive shops and fly fishing organizers in the area surrounding the Amatique Bay. It is possible that the five nature guides are having more success in that region.

57 Cayos Cochinos visitation records show that this individual provided guide services to over 1200 tourists in 2005. In an interview he proudly reported regular earnings of US$4000 or more a month. He says that he earns too much money and is too busy guiding tours to fish anymore.

58 According to the MBRS Progress Report No. 6 (January June 2004): "During the last week of May and throughout the month of June fishermen were trained in Belize and Mexico in open water diving, canoeing and snorkeling, recreational fishing and nature guides; each of these courses included a business administration course. Unfortunately the participation of delegates from Mexico was very limited, since for each course 6 participants were expected from each country and only for the diving course was this group complete; in others there was only an average of 2 to 3 participants. Moreover in the southern region, TIDE started training for Nature Guides and diving for Honduras, Guatemala and Belize in June. Further courses are scheduled for July and August 2004. The manuals produced are being edited for subsequent publication and distribution."

59 Examples:

- Dive Master trainees in Monkey River indicated that it would be difficult for them to make a living as divers without migrating into Placencia. The Dive

Masters make approximately 100 BZ a day or a little more working with resorts or tour operators. But transportation to Placencia from Monkey River is costly. It takes 6 gallons of gas (around 60 BZ round trip) to get to Placencia which would consume a significant amount of their daily earnings. The consultant did not ask if they had ever considered using a pool transportation option to reduce costs.

- An informant from the Belizean Fisheries Department reported that a BTIA/UNDP project to train individuals to be tour guides in Sarteneja had high success rates but only because the trained individuals migrated to Belize City to work with tour operators and guide tours for the cruise ships coming into Belize City (Mejil pers. comm.).

- TIDE reported that two of the dive masters they trained moved to Belize City to work. These two were both "younger guys without family commitments." But they reported that the majority of those trained have families and don't want to leave their home communities.

60 Setting oneself up as an independent fly fishing guide involves significant investments in boats/equipment. A good reel can cost up to US $700 US, a pole costs can cost US $200, and in Belize and Mexico one must have a skiff that has the right characteristics and that is certified for fly fishing.

61 The four fly fishing trainees in Hopkins, Belize who were interviewed by the consultant said that due to the fact they do not have equipment to provide the tour themselves, if someone asks them for a fly fishing tour they normally will refer them to an established fly fisher in the community or to one of the resorts in return for a commission.

62 For example, the oldest dive master in Hopkins, Belize is only 27 years old.

63 Efforts were later made to rectify the SCUBA oversight by providing further training and internships for individuals trained to the Open Water level. Some of the course participants also were able to continue their training to Divemaster status through their own initiative.

64 The process proposed in the report builds upon initiatives that are already underway in some MAR communities, ideas provided in interviews with stakeholders throughout the region including fishers, needs already identified in MBRS and other project documents, and descriptions of projects being carried out outside of the region. An interview with Steve Dudenhoefer, the founder of the very successful Ak' Tenamit project in Livingston and President of the PROGAL project, was particularly important in providing an understanding of the process involved in developing community based tourism projects.

65 For example, according to a recent survey of ecolodge developers: "Experience shows ... that NGOs are useful for community training, community development planning and environmental impact assessment and monitoring... [but display limited] capacity to assist with business needs.... NGOs are not well equipped to assist with ecolodge development." (IFC 2004:26)

66 Numerous examples of successful collaborations and of interest by the public sector to collaborate in eco tourism ventures were identified during fieldwork interviews. These include, for example, a mutually beneficial arrangement between a tour operator based in Antigua, Guatemala and Ak'Tenamit to market its ecolodge; the interest expressed by the Puerto Barrios

Tour Guide Association to develop tourism activities in Punta de Manabique to offer to cruise tourists (including an offer to help in developing appropriate attractions and providing training to village based guides); potential collaboration between FUNDARY and PANADIVERS, a dive shop based in Guatemala City, to develop scuba diving in Punta de Manabique; and the interest expressed by tour operators in Cayos Cochinos for improved community based services. It is recommended that more private sector actors be identified and involved to foment the potential for mutually beneficial development of community based tourism attractions and products.

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APPENDIX I

Key Contacts Interviewed During Site Visits (Feburary 5 – 28, 2006)

Mexico

Diana Bermúdez, TNC Program Director (via e mail)

Omar Ortiz, Assistant Director Sian Ka'an Biosphere Reserve, CONANP

Candido Caamal Uitzil President of Sociedad Cooperativa, "U Voochel Maya"

Antonio Camaal, member and tour guide, Sociedad Cooperativa Alux Es

Aldo Gabriel Ancona, RAGA Tours

Sam Meachan TNC funded hydrological researcher (tracking cenotes and underground water flows that connect to Tulum).

Rafael Pérez Ramírez Consejo Vigilancia Cooperativa Vigía Chica (and former President and community founder)

Miguel Angel Brand Secretario de Consejo Administrativo de Cooperativa Servicios Turísticos Los Gayetanes

Siliva Chuli García Herencia Punta Allen and Secretaria/Socia Cooperativa Vigía Chica

Adrina Najara Cooperativa Servicios Turísticos Punta Allen

Alfredo Martí Secretaria de Vigilancia y Guardaparque, Cooperativa Vigia Chico

Juan Cooperative Vigía Grande

William, Administrator of Boca Paila Fishing Lodge

Eulogio Puc Kinil CONANP

Reuben Alejandro Odil Presidente Vigilancia Cooperativa Turística y Pesquera

Saul Manuel Loya Montejo Secretario Cooperativa Turística y Pesquera

Efraín Hail Cham Delegado Cooperativa Turística y Pesquera

Gustavo Merediz Executive Director of ASK

Belize

Mr. George Ramirez, Chairman of the Village Council, Hopkins

Ashbert Miranda, fisher and tour guide, Hopkins

Kamalley Nolberto: Dive instructor and fly fish trainee, Hopkins

Peter Miranda: fisher and part time tour guide, Hopkins

Mario Nunez: fisher and fly fish guide for resort, Hopkins

Hilaria Zuniga BTB representative from Hopkins

Arthur Vernon: Fly Fish guide from Placencia

Eloy Cuevas: Fly Fish guide from Monkey River

Jason Williams: Dive conservation training participant, Monkey River

Eloy Cuevas Jr.: Dive conservation training participant, Monkey River

Alrin Muschamp: Fly fish training participant, Monkey River

Derwin Garbutt: Fly fish training participant, Monkey River

Evaristo Muschamp, Jr. Fly fish training participant, Monkey River

(Numerous other fishers from Monkey River who were interviewed informally).

Raymond Mossiah, Chief Statistician, BTB

Mrs. Shaun Morgan, Director, Ministry of Local Government and Labour

Mr. Adelfino Vasquez, Labor Officer, Ministry of Local Government and Labour

Mr. Isaias Mejil, Fisheries Department

Mr. Oscar Lara, MBRS

Lidia Villanueva, Hotel Owner and one of the founders of FON, Placencia

Dr. Joseph Palacio, Anthropologist and Freelance Consultant and with MAR Program

Elicia Blumberg, Peace Corp Volunteer, Community Development, FON

Justino Mendez, Community Development , FON

Shannon Romero, FON (Tourism Specialist)

Ellie Dial, Director of Tourism Center, Placencia

Lindsay Garbutt, Executive Director, FON

Dennis Garbutt, Manager/Head Ranger Port Honduras Marine Reserve, TIDE

Dr. Robin Coleman, Science and Stewardship Director, TIDE

Will Maheia, Executive Director, TIDE

Frederick Vernon and Jonathan Labozzetta, TIDE Tours, Punta Gorda (correspondence via e mail)

Guatemala

Carlos Mechel Bay, Consultant for TNC

Juan Carlos Villagran, Executive Director TNC/ PRODAS

Gladys Ramirez, Consejo Comunitario de Desarrollo Estero Lagarto

Blanca Rosa, in charge of Aquaculture and Fishing for FUNDARY

Carlotta Caly Pineda, President of Centro Mar Project in San Francisco de la Mar

Jean Luc Betoulle, Director General, Fundacion Mario Dary

Ing. Oscar Joel Rosales Lemus, Coordinador Regional, Programa de Gestion Ambiental Local (PROGAL)/Proycto JADE

Cristina Rodriguez, Presidenta de los Guias de Turismo de Izabal

David Adolfo Quitro Osorio, Presidente, Comité de Turismo de Puerto Barrios

Frily Galvez, In charge of Tourism for FUNDARY

Javier Jacinto, In charge of the Cabo Scientific Station JO

Cesar Paz, Guardarecursos

Cesar Ramirez, CODECO, Estero Lagarto

Eustagio Ochoa (Don Taco), Presidente Comité de Pescadores y COCODE, Santa Isabel

Ruben Garcia, founder of Santa Isabel

(Other fishers, men and women who participated in the community meeting in Santa Isabel)

Steve Dudenhoefer, founder and Advisor for Ak'Tenamit project, President of PROGAL.

Julio Oli Vernon, Presidente de la Cooperativa de Pescadores de Livingston

Pascual, Local Representative of CISPS

Angélica Méndez, Directora de Red de Pescadores

Ismael (Nanico), Fisher and member of Red de Pescadores, Punta de Manabique

Manfried Hunger, Hotel Manager, Villa Caribe, Livingston and President of Livingston Tourism Committee.

Luis Calderón, Encargado de Manejo Forestal, CONANP Nororiente

Honduras

Adrian Oviedo, Director, HCRF

Lynette Acosta, Peace Corps Volunteer, HCRF

Max, Peace Corps Volunteer, Madera Verde and HCRF, La Ceiba

René Arzú(fish/lobster intermediary and owner of Vista Mar), Nueva Armenia

Vincente, President of Fishers Association, Nueva Armenia

Jose Batista, Member of Fishers Association, Nueva Armenia

Anthony Ives, Director of Scientific Tourism for Operacion Wallacea project

Arlette, owner of Arlette's Restaurant and Hotel, Nueva Armenia

Gilmer René Aranda, Gerente de Promoción y Mercadeo, Sebastian Hotel

Omar Acosta, main tour guide for Cayos Cochinos, Sambo Creek

Rosy, Community Leader and member of Patronato, Rio Esteban

Leanoer David, Member of the Patronato, Rio Esteban

Jose Angel Moya, Member of the Grupo Delfines del Caribe

Juan Garcia, President of the East End Patronato, Rio Esteban

Jose Angel Moya, President of Grupo Delfines del Caribe, Rio Esteban

Jose Mirina, Fisher in East End, Rio Esteban

President of the Junta de Agua, Rio Esteban

Italo Bonilla, Scuba Instructor and Science Assistant, HCRF

Adoni Cubas, Director de Ciencia y Manejo, HCRF

Carolina, tourist service provider on Chachahuate

Fausto, fisher and artisan on Chachahuate

Exon Aranda, resident of East End and Reserve Guard, Cayos Cochinos

Fishers and women on East End (informal interviews)

Gustavo Cabrera, Director Ejecutivo, Cuerpos de Conservación, Omoa

Calina Zepeda, Director Ejecutivo BICA Utila (via e mail)

APPENDIX II

Results of Tour Operator Census, Demand for Guide Services, Placencia Peninsula

Tour Operators Interviewed:

Name of Operator	Location	Ownership Nationality
Aashum Adventures	Placencia	Belizean
Belize Sailing Charters	Placencia	Belizean
Caribbean Tours	Placencia	Belizean
Destinations Belize	Placencia	Foreign
Joy Tours	Placencia	Belizean
Manta Resort	Placencia	Belizean
Next Wave Sail	Placencia	Foreign
Nite Winds	Placencia	Belizean
Ocean Motion	Placencia	Belizean
Rum Point Inn/Rum Point Divers	Placencia	Foreign
Rum Runners	Placencia	Belizean
Sambur Tours	Placencia	Belizean
Seahorse Dive Shop	Placencia	Belizean
Singing Sands	Placencia	Foreign
Soulshine Resort	Placencia	Foreign
South Belize Reef & Jungle Tou	Placencia	Belizean
Toadal Adventure Belize	Placencia	Belizean
Trip and Travel	Placencia	Foreign
Saks	Placencia	Foreign
Turtle Inn	Placencia	Foreign
Splash Dive Shop	Placencia	Belizean
Pelican Tours	Placencia	Belizean
Tropical Belize	Placencia	Belizean
Global Adventures	Placencia	Foreign
Hamanasi Dive and Adventure Re	Hopkins	Foreign
Serenede Guest House	Cayes	Belizean
Kingfisher's Tarpon Caye Lodge	Cayes	Belizean
Whipray Caye Lodge	Cayes	Belizean
Blue Marlin Lodge	Cayes	Belizean
Isla Marisol	Cayes	Belizean
Glovers Atoll	Cayes	Belizean
Saddle Cayes South	Cayes	Foreign
Placencia Hotel/Zeboz	North Peninsula	Foreign
Kanantik Reef and Jungle Resor	North Peninsula	Foreign
Pleasure Cove Lodge	Sittee River	Foreign
Jaguar Reef	Sittee River	Foreign
Second Nature Divers	Sittee River	Foreign
Maya Breeze Inn	Maya Beach	Foreign
Calico Jack's Village	Maya Beach	Belizean
Nautical Inn	Seine Bight	Foreign
Inn at Robert's Grove	Seine Bight	Foreign

Summary of Results:

- Total number of tour operators on peninsula =41
- Total number that only farm out = 6 (14.6%)
- Total number that organize tours = 35 (85.4%)
- Nationality of owners = 53.7% (22) Belizean born; 43.6%(19) foreign born
- Percentage that organize scuba dive tours = 51.4% (18)
- Percentage that organize dive certification = 45.7% (16)
- Percentage that organize fly fishing tours = 68.6% (24)
- Percentage the organize nature tours = 57.1% (20)
- Percentage that organize bird watching tours=54.3% (19)
- Percentage that organize kayaking tours = 51.4% (17)
- Percentage that organize snorkeling tours=71.4% (25)
- Percentage that organize other types of tours= 47.1% (16)
- *Other types of tours mentioned include:* camping, canoeing, river tubing, horseback riding, manatee watching, sailing, spincasting and trolling, whalewatching from boat, windboarding and kiteboarding.
- Nationality of guides = 99% Belizean (only two operators use one or more non Belizean guides. These guides are dive instructors).
- Additional Personnel or Complementary Training Needs=71.8% of informants interviewed reported that there are areas where is a shortage of personnel for guide services or a need for complementary training.

Overall Demand for Tour Guide Services on the Placencia Province

Specialization	Total on staff	Additional hires per week high season	Additional hires per week low season
Dive guides/instructors	36	55	19
Dive assistants	16	42	12
Sport and fly fishers	23	64	24
Others	48	88	28
TOTALS	123	249	83

Demand for Dive Tour Leaders/Instructors by Location

Location	Permanent Staff	Additional hires high season	Additional Hires low Season
Placencia	16	32	10
Hopkins	6	0	0
Cayes	4	3	0
North Peninsula	4	1	1
Sittee River	2	9	2
Seine Bight	4	10	6
TOTAL	**36**	**55**	**19**

Demand for Dive Assistants by Location

Location	Permanent Staff	Additional hires high season	Additional Hires low Season
Placencia	10	21	6
Hopkins	3	0	0
Cayes	0	0	0
North Peninsula	2	3	0
Sittee River	0	0	0
Seine Bight	1	18	6
TOTAL	**16**	**42**	**12**

Demand for Sport/Fly Fishing Guides by Location

Location	Permanent Staff	Additional hires high season	Additional Hires low Season
Placencia	16	40	19
Hopkins	1	1	0
Cayes	4	3	0
North Peninsula	0	5	3
Sittee River	1	2	0
Seine Bight	1	13	2
Total	**23**	**64**	**24**

Demand for Other Guides by Location

Location	Permanent Staff	Additional hires high season	Additional Hires low Season
Placencia	33	74	24
Hopkins	3	0	0
Cayes	3	0	0
North Peninsula	2	0	0
Sittee River	5	0	0
Seine Bight	2	14	4
Total	**48**	**88**	**28**

Additional Personnel or Complementary Training Needs Mentioned by Operators

Area	Number	Percentage
Birding	11	27%
Client relations	7	17%
Divemasters	4	10%
Archaeology guide	3	7%
Dive Instructors	3	7%
Fly fishing	3	7%
Marine interpretation	3	7%
Nature guides (more specialized)	3	7%
Inland tours	3	7%
Kayaking	2	5%
Snorkeling	2	5%
Caving	2	5%
Camping	1	2%
Monkey River guides	1	2%
Wilderness emergency management	1	2%
Manatee watching	1	2%
water safety, basic seamanship	1	2%
Whale shark guides	1	2%
Belize knowledge	1	2%
Literacy rates	1	2%
Specialized certification prog	1	2%

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APPENDIX III

alternative livelihood/sources of income related projects identified in the MAR coastal communities

Location	Year	Sponsoring/ Implementing Organization	Project Description	Number of Beneficiaries/ Other Details
MEXICO				
Northern Quintana Roo (Isla Holbox)	recent	WWF	Training of fishers as whale shark ecotour guides	N/a
Sian Ka'an communities	2004	PRODERS/ CONANP	Ecotourist Enterprises	90
Sian Ka'an all communities	Annual	CONANP	Guide Certification training. All tour guides working in Sian Ka'an must take this course annually to keep their certification updated.	In 2005 there were approximately 140 guides who took the course.
Sian Ka'an communities	1998 -99	CONANP	Elaboration of Mayan crafts, formation of a microenterprise of rustic furniture; elaboration of crafts with bejuco.	108 individuals participated in the projects
Sian Ka'an communities	1998-99	CONANP	Fly fishing training and organization	28 beneficiaries each year.
Sian Ka'an communities	2002	UNF-UNEP/ Local Cooperatives	Support for community ecotourism development in Carrillo Puerto, Punta Allen, Muyil, and Punta Herrero.	Sociedad Cooperativa Mots Maya de Felipe Carrillo Puerto (24 individuals); Sociedad Cooperativa de Servicios Turísticos de Punta Allen (6); Organización Muyil, Conjunto de Aluxes, SPR de RI (9); Organización Lancheros de la Bahía S.C. de R.L., Punta Herrero, Mpio. de Felipe Carrillo Puerto (19)
Sian Ka'an communities	1999-2000	Canadian Government and TNC/ASK	Training in embroidery, furniture making, making medicine using medicinal plants.	N/a
Sian Ka'an (Punta Allen and Punta Herrero)	2003 - 2005	PNUMA / ICRAN-SAM	Exchanges with fishers from Mexico, Belize, Guatemala, Honduras.	N/a
Sian Ka'an (Punta Allen, Punta Herrero, Xcalak)	N/a	ASK	Training in birding	N/a
Sian Ka'an (Muyil)	N/a	CONANP PRODERS	Training for women in Muyil in sewing and embroidery	N/a
Sian Ka'an (Punta Allen, Punta Herrero)	Various	UNDP-COMPACT	Training and ecotourism development in Punta Herrero, Punta Allen and other communities around Sian Ka'an.	N/a

Sian Ka'an (Punta Allen)	N/a	ASK	English language training for youth and adults in Punta Allen and Muyil	N/a
Sian Ka'an (Punta Allen, Muyil)	Current	RARE	Marketing of eco-tours, joint tourism promotion and development, English language training.	Four tourism cooperatives in Punta Allen and Muyil
Sian Ka'an Punta Allen (and Punta Herrero?)	N/a	MBRS	Exchanges with fishers from Panama, Honduras and other areas in Mexico.	N/a
Mahahual, Xcalak (Banco Chinchorro, Xcalak Natural Park)	N/a	ICRAN/WWF	Training of ecotourism guides in Mahahual and Xcalak	This may be same training provided by Green Reef/ MBRS.
BELIZE				
Ambergris Caye	2004	MBRS/Green Reef	Eco-guide training for fishers from northern Belize and Mexico	See Chapter 3 for details
Gladden Spit (Monkey River)	Current	UNDP/Monkey River Fishers Assn.	Sustainable lobster fishing.	40 fishers groups in community.
Gladden Spit (Monkey River)	N/a	UNDP/Monkey River Tourism Assn.	Ecotourism development (certification of tour guides, support to set up tourism association).	26 certified guides, others.
Gladden Spit (Hopkins, Placencia, Monkey River, Sittee River, Independence)	2003	TNC and UNDP-COMPACT/ Friends of Nature	Ecotour guide training for fishers in fly fishing and diving	See Chapter 3 for details.
Sarteneja and Hopkins	2004-05	Coastal Zone Management Authority and University of West Indies	Carried out feasibility studies for alternative livelihoods. Focus is community-based sustainable tourism.	See: http://sta.uwi.edu/sedu/documents/R8325%20Newsletter%20Final%20Oct2004.pdfe N/a
Sarteneja	Current	UNDP-COMPACT/ BTIA	Reportedly providing assistance to train tour guides and open small tourism businesses.	N/a
Sarteneja	N/a	Programme for Belize	Capacity building for the Sarteneja Fishing Community	N/a
Sarteneja	Ongoing	SWEET	Implementing or planning diverse ecotourism/research projects; training in alternative livelihoods and small business management.	N/a
Dangriga	Ongoing?	UNDP-COMPACT/ Local organization	Establish seaweed farms on the islands in the Tobacco Caye Range in the South Water Caye Marine Reserve	N/a
Central Belize	Ongoing	ICRAN/WWF	Pilot farm, marketing study, training in seaweed cultivation	N/a
Punta Gorda	2004	UNEP/TIDE	Community Ranger Training	14 individuals trained

Punta Gorda	Ongoing	CREP/TIDE	Life skill training: Electrical training; cooking, home economics, and others	40 people trained to date from communities users of Port Honduras Marine Reserve and Paynes Creek National Park
Punta Gorda	1999-2000	ORVIS Fly Fishing	Recreational/fly fishing	14 fishers from Punta Gorda area
Punta Gorda	2004	MBRS/TIDE	Ecoguide training for fishers from southern Belize, Guatemala and Honduras	See Chapter 3 for details
Punta Gorda	2004-5	GEF-SGP/TIDE	Ecoguide, small business training for individuals from Punta Gorda area	See Chapter 3 for details
GUATEMALA				
Punta de Manabique (Estero Lagarto)	Ongoing	PROGAL and FUNDARY	Strengthening of local Community Development Council and promotion of ecotourism through guide and food and beverage service training and building an ecolodge.	10 guides trained and 8 women in food and beverage services.
Punta de Manabique (Santa Isabel)	Ongoing	PROGAL and FUNDARY	Strengthening of Community Development Council; visitor center construction; development of charcoal tour and training of guides.	14 individuals trained as guides and in food and beverage services. Exchanges with communities in COPAN.
Punta de Manabique (Santa Isabel)	2005	CISP	General maintenance of outboard motors	One individual from Santa Isabel (training also offered to other communities but information not available).
Punta de Manabique (San Francisco de la Mar)	Ongoing	PROGAL, Swiss Embassy, AGROSID, GEF-SGP/ FUNDARY and Centro MAR,	Support for Centro Mar, value added production of non-traditional fish products.	9 women and 4 men
Punta de Manabique (Cabo Tres Puntos)	2005	PROGAL and FUNDARY	Aquaculture pilot project	N/a
Livingston	Ongoing	CISP and FUNDAECO	Formation and strengthening of Amatique Bay fisher organization (Red de Pescadores) and Shrimp Trawler's Cooperative. Establishment of Fisher Market and Service Center	30 shrimp trawlers and 900 fishers in the Amatique Bay area.
Livingston and Rio Dulce	Ongoing	Ak'Tenamit	Fair Trade Handicraft Production; School for Sustainable Tourism; Community-based tourism training and others.	Mayan communities throughout Izabal area.
Rio Dulce, Livingston	Ongoing	FUNDAECO	Ecotourism guide training, trail interpretation, others.	N/a

HONDURAS				
Cayos Cochinos (Nueva Armenia, Rio Esteban, Sambo Creek)	2004/5	InterAmerican Foundation/ Cayos Cochinos Foundation	Micro-enterprise training and seed grants.	5 partners for a fish purchasing business in Nueva Armenia; 11 women in an ice producing business; others
Cayos Cochinos (Nueva Armenia)	Ongoing	Operation Wallacea/ Cayos Cochinos Foundation and Peace Corps	One night overnight stay for cultural tourism experience for scientific tourism program participants. Organize local tourism committees.	Community of Nueva Armenia
Cayos Cochinos (East End)	Ongoing	Peace Corps Volunteers	Initiative to build ecolodge and restaurant	Community of East End
Cayos Cochinos (Nueva Armenia and Rio Esteban)	2005	Solidaridad	Pottery making and other crafts	Women in Nueva Armenia and Rio Esteban
Cayos Cochinos (Nueva Armenia and Rio Esteban)	2004-5	UNDP GEF-SGP/ OFRANEH	Support for community-based tourism development	This has been a highly conflictive project and local beneficiaries claim they never received promised funds or support from OFRANEH
Cayos Cochinos (Rio Esteban)	2003?	Spanish Association for International Cooperation/ local women's group	Ecolodge project (the project has extensive infrastructure but is currently paralyzed due to conflicts with OFRANEH)	30 women from the community.
Cayos Cochinos (Rio Esteban, East End, Chachaguate, Nueva Armenia)	N/a	Instituto Nacional de Formación Professional	Courses in tour guiding, food and beverage services, hotel managment, tourism services.	30 individuals from the four communities.
Cayos Cochinos (unspecified)	N/a	Cayos Cochinos Foundation	Divemaster training	Eight individuals (only one actually achieved divemaster status).
Cayos Cochinos (Chachaguate and others)	Ongoing	Adelante Foundation	Rotating credit program for women who purchase fish.	N/a

EDITORIAL SERVIPRENSA

Este libro fue impreso en los talleres gráficos
de Serviprensa S. A. en el mes de noviembre
de 2008. La edición consta de 250 ejemplares
en papel bond 80 gramos.

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