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Fishers’ job satisfaction in the Caribbean
by
Iris Monnereau, Victor Ruiz et Richard Pollnac

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Fishers’ job satisfaction in the Caribbean

Introduction

A variety of researchers have carried out job satisfaction studies in fisheries during the last decades (Pollnac et al., 2001; Binkley, 1995; Gatewood and McCay, 1988). The significant role of self-actualization in the determination of job satisfaction has been one of the key outcomes in all these studies and backs the reasoning that fishing is more than just a livelihood, but rather ‘a way of life’ (Gatewood and McCay, 1988: 126). Pollnac et al. (2001) make a similar point for South-East Asian fishers and therefore argue that contrary to the expectation of fisheries managers, fishermen are not likely to be interested in alternative employment. Even when facing declining catches and falling incomes they will still hold their occupation (McGoodwin, 1990).

Job satisfaction analysis is an attractive tool as it facilitates comparing fisher’s satisfaction from different fishing groups both within countries as between countries. The survey applied uses five different categories; basic needs, social needs, self-actualization, management and the value of nature. This study aims to investigate differences in job satisfaction between different fishers in the Caribbean.

The “Wider Caribbean” region includes the northeast coast of South America, the Insular Caribbean, the Gulf of Mexico and the southeastern Atlantic coast of North America. The region is geographically complex with the highest density of separate states per unit area in the world (Chakalall, Mahon and McConney, 1998; Breton, 2006). This study aims to investigate differences in job satisfaction between different lobster fishing populations in the Caribbean. Lobster fishing (*Panulirus argus*) is an important economic activity throughout the Caribbean Basin, both as a source of income and employment for the local population as well as foreign exchange for national governments. At present 50,000 lobster fishers are estimated to be active in the Caribbean Basin, with an additional 200,000 people working in positions related to the lobster fishery (FAO, 2003a). An average of 35,000 MT are caught in the Caribbean Basin annually with a corresponding value of around 500 million US$ (Cochrane and Chakalall, 2001). Due to the high unit prices of the product and magnitude of production, the trade provides a way to improve the livelihoods of fisheries dependent population in the Caribbean Basin. In this paper we will investigate the job satisfaction among lobster fishers in Jamaica, Nicaragua and the Dominican Republic.

Fisheries in the Caribbean countries are based upon a diverse number of resources. The most important fisheries are for offshore pelagics, reef fishes, lobster, conch, shrimps, continental shelf demersal fishers, deep slope and bank fishes and pelagics. The types of gear used differ between the different fishers and varies across the different nations. The importance of these fisheries also varies widely among the countries (Chakalall, Mahon and McConney, 1998). The region not supports any of the world’s major fisheries but the fisheries are economically important to most countries in the area. In general, shelf resources (e.g. lobster, conch, reef fish and shrimp) are either fully exploited or already over exploited (Chakalall, Mahon and McConney, 1998). This situation provokes some unwanted consequences in the regional fisheries, like adding more pressure to the natural resources, creating conflicts between fishers, affecting their livelihood (Salas et al, 2007) and the decrease in quantity and quality of the marine resources (Breton, 2006).

The small scale fisheries dominate in the Caribbean Basin. Levels of poverty is a significant problems between fishers in some islands like, Dominica, Hispaniola, Jamaica and St. Lucia, while on other islands many fishers can be at risk as a result of low incomes (Breton, 2006).
This research is conducted among fishers in Nicaragua, Jamaica and the Dominican Republic. These countries differ significantly in structure of the fishery as well as governance arrangements. In this paper we wish to investigate to what extent fishers’ job satisfaction could be related these differences and to what extent lobster fishers in this region would be willing to change.

Application of the job Satisfaction concept to the Caribbean countries

Job satisfaction concept

Satisfaction has been studied by a variety of disciplines from various angles, from organizational behavior studies, psychology, sociology and more recently labor economics. In the thirties and forties many job satisfaction studies were already carried out to determine the correlates of high and low job satisfaction. Such studies related job satisfaction to seniority, age, sex, education, occupation, and income among others (Lawler and Porter, 1967). In general job satisfaction is defined as “an affective response by an employee concerning his/her particular job and results from the employee’s comparison of actual outcomes with those that are expected, needed, wanted, or perceived to be fair or just” (Lambert, Hogan and Barton, 2001). It is a “subjective, individual-level feeling that reflects whether a person’s needs are or are not being met by a particular job” (Lambert, Barton and Hogan, 1999) and therefore as Spector (1997: 2) pointed out, simply “the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs.”

In line with global job satisfaction studies, job satisfaction studies in fisheries have been mostly concerned with North America (see Pollnac and Poggie, 1979; Smith 1981, Apostle et al., 1985). Only a handful have been carried out in the South (see Pollnac et al., 2001). Pollnac and Poggie (1979) authored one of the first publications on job satisfaction in fisheries. The schedule on which this article was based included 22 items, 18 of which were adapted from earlier, general work on job satisfaction (Schletzer, 1965 in Bavinck and Monnereau, 2007). Pollnac and Poggie, however, added four items, specific to the occupation of fishermen. The authors loosely link the 22 items to Maslow’s (1954) hierarchy of needs, introducing three categories: 1) physiological needs and safety, 2) love, belongingness and self-esteem, and 3) self-actualization. In addition, they included two questions on overall job satisfaction. The first asks whether a fisherman would still go fishing if he had his life to live over again; the second whether or not he would advise a young man to go into fishing.

Their framework, tested among different fishing groups in New England, yielded significant results. The results demonstrated meaningful differences between fishermen from various ports and subsectors. The authors claimed there was more to fishing than pure moneymaking and that these non-monetary factors should be taken into account if they want to develop effective and humane management programs. This early study of job satisfaction gains relevance from the fact the authors have continued their work on this and related topics and wrote a follow-up article almost two decades later (Pollnac and Poggie, 2006). Numerous other job satisfaction studies in North America have been carried out in the meantime (see Gatewood and McCay, 1988, 1990; Binkley, 1995). “All these authors make reference to and build upon each others work and can thus be regarded to constitute a scientific corpus on the topic of job satisfaction in fisheries” (Bavinck and Monnereau, 2007). Binkley conducted a meta-analysis of the various studies on job satisfaction in fisheries and concluded that despite the variations in surveys used, they yield similar results.

Methodology

The survey of job satisfaction used in this research is based on the methods developed by Pollnac and Poggie (1988). Two categories have been added in the light of the ECOST project.
the categories management and value of nature. The survey therefore consists of questions in the following five categories: basic needs, social needs, self-actualization, management and the value of nature. Instead of the two general questions used by Poggie and Pollnac (1988) three questions were used in this survey.

Besides the three categories used by the authors mentioned in the previous section two categories have been added in the light of the ECOST project: the categories management and value of nature. The survey therefore consists of the following five categories: basic needs, social needs, self-actualization, management and the value of nature. However, previous to the 27 questions on job satisfaction over the five categories the respondents answered 8 general questions regarding age, gender, number of dependents and so on. In reference to the two questions above three questions were used in this survey. These three questions relate to the willingness to enter a job outside of fishing or move to another type of fishing and whether he would advice a young adult to enter the fishery.

The research instrument was administered to a sample of 182 fishers from Jamaica, Nicaragua and the Dominican Republic. The majority of fishers were interviewed in the Dominican Republic (130) while in Jamaica and Nicaragua both 26 were carried out. The Likert scale was used to rank the response of the 27 questions, a ranking method often used in survey research. When responding to a Likert questionnaire item, respondents specify their level of agreement to a statement. In this survey a five-point scale was ranging from very 1) unsatisfied, 2) unsatisfied, 3) neutral, to 4) satisfied and 5) very satisfied. In addition three overall questions on job satisfaction have been added relating to whether a fisher would enter a job outside of fishing or move to another type of fishing and whether he would advice a young adult to enter the fishery. The respondent was asked to respond with either yes or no.

The surveys carried out in Nicaragua and Jamaica was carried out by the first author.

In Nicaragua, the job satisfaction surveys were carried out on Corn Island. Fishers in Corn Island are responsible for 50% of the total lobster landing in Nicaragua. Three different fishing groups are present: small-scale divers, small-scale trappers and industrial trappers. The industrial diving fleet which is also of importance in the lobster fishery in the northern zone of Nicaragua is not present in this area and therefore not represented in this survey. The survey was administered to a sample of 26 fishers in Nicaragua, 69 percent (18 surveys) of whom are small-scale trap fishers, 15 percent industrial trap fishers (4 surveys) and 15 percent small-scale divers (4 surveys). Fishers were targeted to fill in the survey at the sheds of different middlemen where they would sell their catch in the afternoon, or at the central ‘park’. Industrial fishers were approached at the piers of processing plants and the public pier where the industrial boats are stationed.

In Jamaica the survey was administered to a sample of 26 trap fishers and divers fishers in 6 communities: Crawford, Black River, Alligator Pond, Whitehouse, Gallon beach, and Treasure Beach. These communities are located in parish Westmoreland. Westmoreland is one of the four parishes with the highest production of lobster in Jamaica. Although these fishers live in Westmoreland they are not all inshore fishers, a large part also fishes for 8-9 days at Pedro bank. Pedro Bank is the most productive fishing ground of Jamaica located 140 km out of Kingston. Fishers were approached at the landing beaches where they arrived in the afternoon (in the case of day fishers) or in the night/morning (in the case of Pedro Bank fishers).
In the Dominican Republic the surveys were conducted in six coastal provinces by the second author. Of these six provinces in the Dominican Republic, five of them along the north coast, which hosts the largest fisher populations in the country, and one along the east coast. The east coast province was included because of its proximity to Parque Nacional del Este, and an ongoing interest in understanding the impact of marine protected areas on job satisfaction. The second author subsequently selected twenty nine landing sites in these provinces for further study.

Current differences between the countries

The fisheries in Nicaragua, Jamaica and the Dominican Republic share many characteristics but also differ in many respects. In this section the main differences will be mapped and shown in Table 1.

Nicaragua is on average the poorest of the three and holds the 124th place on the UN’s Human Development Index (UNDP 2007). Jamaica is generally categorized as a middle-income country, ranking medium (100 in an index of 162 countries), while the Dominican Republic holds the highest position of the three at the 90th rank on the HDI.

Table 1: General characteristics of Nicaragua, Jamaica and the Dominican Republic.

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<th>Jamaica</th>
<th>Nicaragua</th>
<th>Dominican Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (km²) (thousands)</td>
<td>11.0</td>
<td>130.0</td>
<td>23.0</td>
</tr>
<tr>
<td>EEZ (km²)</td>
<td>274,001</td>
<td>110,922¹</td>
<td>246,454²</td>
</tr>
<tr>
<td>Population (x thousands)</td>
<td>2,690</td>
<td>5,680</td>
<td>10,090</td>
</tr>
<tr>
<td>GDP (billion US$)</td>
<td>15.07</td>
<td>6.59</td>
<td>44.7</td>
</tr>
<tr>
<td>GNI per capita (PPP) (US$)</td>
<td>7,360</td>
<td>2,620</td>
<td>8,672</td>
</tr>
<tr>
<td>Human Development Index¹</td>
<td>0.766 (100th place)</td>
<td>0.699 (124th place)</td>
<td>0.777 (90th place)</td>
</tr>
</tbody>
</table>

Sources: World Development Indicators database, April 2009. Indicators based on 2008.
Gear types can be roughly divided into trappers and divers. However, trappers can be either industrial or small-scale and either made of wood, also called ‘lobster pots’ (Nicaragua and the industrial Jamaican fleet), chicken wire (Jamaica) or basket traps (Dominican Republic). Divers use hookah equipment in Jamaica and the Dominican Republic and SCUBA-equipment in Nicaragua.

Table 2: Lobster fishery sector in Jamaica, Nicaragua and Dominican Republic

<table>
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<tr>
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<th>Jamaica</th>
<th>Nicaragua</th>
<th>Dominican Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobster fishery volume export (lbs. of tails per year)</td>
<td>700,000</td>
<td>1,100,000</td>
<td>435,478*</td>
</tr>
<tr>
<td>Scale of fishery (small-or industrial?)</td>
<td>Small-scale and industrial</td>
<td>Small-scale and industrial</td>
<td>Small-scale and industrial</td>
</tr>
<tr>
<td>% of total catch per scale level</td>
<td>60% small-scale and 40% industrial</td>
<td>50% small-scale and 50% industrial</td>
<td>70% small-scale and 30% small industrial fleet</td>
</tr>
<tr>
<td>Gear type</td>
<td>Wooden traps (industrial boats)</td>
<td>SCUBA divers (industrial and small-scale)</td>
<td>Basket traps, wooden traps, SCUBA divers</td>
</tr>
<tr>
<td>Lobster fishery volumes</td>
<td>Lobster traps (small-scale fishers)</td>
<td>Wooden traps (industrial and small-scale)</td>
<td>Hookah divers</td>
</tr>
<tr>
<td>Boats</td>
<td>Industrial lobster boats 3,874 small-scale boats (fiberglass and wood). Some small non-mechanized boats,</td>
<td>78 industrial boats (51 trapping boats and 27 diving boats). 4,155 small-scale boats (of which 1,892 operate in the Caribbean region),</td>
<td>62 industrial boats 3,690 small-scale fishing boats (fiberglass and wood).</td>
</tr>
<tr>
<td>Length of trip (absence from home)</td>
<td>Daytrippers and fishers that leave for 7-10 days.</td>
<td>Daytrippers or 20 days (industrial divers) or 45 days (industrial trappers)</td>
<td>Daytrippers or 20 days (industrial divers)</td>
</tr>
<tr>
<td>Single/multi species fishery</td>
<td>Multi-species (lobster, conch, a variety of fish)</td>
<td>Single species (only lobster)</td>
<td>Multi-species (conch, lobster, a variety of fish)</td>
</tr>
</tbody>
</table>

* Infante 2007 Pesca de Langostas en Republica Dominicana.

The lobster fishery of Nicaragua produces the largest volume of lobster tails. It’s a single species fishery in which fishers only target lobster. The lobster fisheries of Jamaica and the Dominican Republic are smaller (700,000 and 435,478 lbs. respectively). The fishers in these countries are multi-species fishers where they target a variety of sea products.

**Happiness of Nicaraguan lobster fishers**

The Caribbean coastal zone with its shrimp, lobster and scale-fish fisheries is economically the most important area of the Caribbean region of Nicaragua. Lobster, shrimp and scale-fish represent respectively the 6th, 13th and 15th place of the most valuable export products of Nicaragua (Rivera 2005). The fishing sector contributes 1.5% to the total GDP. Currently exports of lobster tails are around 1.1 million MT annually. Nearly all of the lobster is exported, mostly to the United States, as local demand is low. The best lobster fishing grounds are around the Miskito Keys in the north and in the vicinity of Corn Island in the south.

Until the 1950s, exploitation of the lobster resource on the Atlantic coast of Nicaragua was limited, owing mainly to the difficulty of access to international markets by isolated coastal communities lacking infrastructure for transport and processing (WB, 1999: 1). In the 1950s lobster became an export product, and the main market was the United States (Vilas, 1989:76). Lobster catches increased steadily throughout the 1960s and 70s. However the civil war (from 1979-1990) stopped the lobster production temporarily. The revolutionary government
nationalized all goods and foreign owned shrimp and lobster companies and boats were either expelled or fled the country. With the end of the civil war in 1989, economic sanctions against Nicaragua were lifted and in 1990 the new government reinstated private enterprise attracting business interest from the USA once again (Meltzoff and Schull, 1999: 12). At the end of the years of conflict, the issuing of large numbers of licenses to foreign boats and an expansion of the national fleet created by a large international demand and rising unit prices promoted a market rise in production leading to a considerable increase in export of lobsters since the 1990s.

There are different types of intermediaries between fishers and processing plants ranging from small informal intermediaries, such as the ‘bucket ladies’ to more official middleman. Bucket ladies buy lobster directly from fishers at landing sites. The more institutionalized middlemen, locally known as ‘acopios’, are fully licensed and usually they have large coolers full of ice and often they own trucks to ferry fishing equipment, fuel, and ice (Monnereau, 2004). They extend credit mostly in kind to fishers. Fishers are often highly indebted to these middlemen and will at times try to sell their catch to other middlemen or ‘bucket ladies’ in order not to have to pay off their debts. The majority of fishers sell their catch through middlemen although some also sell directly to processing plants. At present an average of 8-10 processing plants are in operation on the Caribbean coast of Nicaragua. The processing plants also own a large majority of the industrial vessels, which increases their profit shares. Only a very limited number of the fishers are member of fishing cooperatives. There are only a few small fishing cooperatives and they only have a few dozen members.

In Nicaragua restrictions and regulations regarding the lobster fishery have been established. There are laws regarding the minimum size, a closed season and laws prohibiting the catch of berried females and molting lobsters. Enforcement of regulations has however been low and the department poorly staffed. The Nicaraguan lobster fishery is believed to highly overexploited (Ehrhardt, 2006). In addition there is large-scale illegal fishing by foreign fleets as well as undersized lobsters by national fishers. AdPESCA states that the illegal catch might have been as big as the legal catch during the 1990s (Kuninski, 2003: 5).

The Nicaraguan job satisfaction surveys showed the following results per category (fig 1). Mean values for all scores fall above the mid-point of 3 indicating general satisfaction with the five categories of job satisfaction. Social needs is the highest scoring category, followed by nature, basic needs, self-actualization and management.

Mean values for all scores fall above the mid-point of 3 indicating general satisfaction with the five categories of job satisfaction. The category social needs scores very high. This could be related to the fact fishers here also enjoy being out at sea, enjoy being their own master and do not feel dissatisfied with the time they are able to spend with friends and family as they are mostly only day fisher absent no longer than 10 hours. The satisfaction with the questions on “being your own boss”, away from home ”and “community” are three of the highest five scoring questions in the survey. This explains the overall satisfaction for the social needs category.

The basic needs category and social needs category follow the social needs category with almost identical scores. The fishers were especially positive in the value of nature category on the landing site on which they deliver their product. These are usually close to their home and most fishers have been trading with these middlemen for many years. Despite the decreasing amount of lobster, fishers are still able to be satisfied with the level of fish stocks as well as their basic needs. However, the item “ability to feed your family” was the worst scoring item in the survey.

Self-actualization scores lower than the basic needs and nature category. Fishers were generally satisfied with the “challenge” and “adventure” their job offered but less satisfied with the ‘worthiness’ of their job. This could relate back the low score on ‘the ability to feed
your family’. It could be that fishers, facing declining catches and therefore lower ability to feed your family, feel like their job is less ‘worthy’.

The category management had the lowest score however it was still just below 3.3 therefore fishers are still generally satisfied with this category. Fishers were especially dissatisfied with the “level of conflicts” and the “ability to resolve conflicts”. This could be related to the fact that three different fishing métiers are present in the Corn island lobster fishery; small-scale divers, small-scale trappers and industrial trappers. Conflicts are especially present between the two small-scale fishing groups. Trappers blame divers for emptying their traps while divers blame trappers for tearing up the seafloor with all their traps. In addition most small-scale fishers are unhappy with the presence of the large industrial fleet.

![Graph: Mean values and confidence intervals of job satisfaction categories in Nicaragua](image)

In the Nicaragua sample of job satisfaction surveys, only one fisher each was either willing to change type or leave the occupation (about 4 percent each). In contrast, with regard to advising a young person to enter the occupation, the majority (69 percent) said yes. Due to the extremely small number of fishers responding “yes” to the first two questions, we are only able to conduct statistical analyses on responses concerning advising a young person to fish. However, the low level of responses to willingness to change type of fishing or leave the occupation and high numbers of those advising a young person to enter the occupation could relate to the fact the surveys are undertaken in an area where there are hardly any options besides lobster fishing. The economy of Corn Island is solely dependent on fishing and alternatives are few. In addition, those who have opted to leave the occupation (e.g. leave the island to work on crew ships) are not surveyed.

Willingness to change is expected to be related to levels of job satisfaction—the higher the satisfaction the more willing they should be to advise a young person to fish. Since we are predicting the direction of the relationship, one-tailed statistical tests of significance are used. Table 3 indicates that those more satisfied with Management are more likely to encourage a young person to enter the occupation. It should be noted that although most of the differences displayed in table 3 are not statistically significant, all except the scores for Self Actualization are in the predicted direction.
We examined the responses in relation to background social variables but the only statistically significant difference is that those with more education (mean 6.7 years) are more likely than those with less education (mean 3.9 years) to advise a young person to enter the occupation of fishing. Next, we turn to relationships between willingness to advise a young person to fish and three other social variables: marital status, fishing type, and crew position. With regard to these 3 questions concerning job satisfaction, none are statistically significantly related to the two social variables (all $\chi^2 < 1.0$, df = 1, p > 0.05, Yates corrected).

**Concerns and happiness in Jamaica’s lobster fishery**

Fishing in Jamaica has long been a source of both food and employment. The fishery makes a significant contribution to the Jamaican economy accounting for 7.5% of the GDP of the agricultural sector, and 8 percent of the agricultural export earnings (van Riel, 2005). This is not very large however in comparison with other sub-categories contributing to the GDP but the sector has been showing an increasing trend (FAO, 2005). The sector provides employment for many Jamaicans and contributes highly to the food security and the alleviation of poverty. There are large fishing grounds on the southern shelf while the best fishing grounds of Jamaica are found at Pedro Bank, a large oceanic bank 150 km to the southwest of Kingston (Aiken and Kong, 2000).

The fish targeted are primarily, the deep-slope demersal fish, the shallow-reef finfish species, spiny lobsters, queen conch, and coastal pelagics and shrimp. Fin fish is both in volume and value the most important marine export product, conch is the second most important export product, followed by spiny lobster and shrimp. On average 700.000 MT of lobster tails are exported. However, this is only 15% of the total catch as the majority of the lobster catch goes to hotels and restaurants for the tourist market in Jamaica (Venema, 2004).

There is little documentation on the development of the lobster fishery since the 1960s. Large-scale fishing for lobster did not begin until the 1980s. Between 1980 and 1988 there was a large-scale wooden trap fishery on Pedro Bank and this industrial fishery formed the basis of a very profitable export industry. However, by the end of the 80s catches already started to decline. In the beginning of the 80s eleven boats had been employed, by the end of the decade only six were still in operation. The impact of this fishery on lobster stocks of the Pedro bank was probably quite serious as there has been virtually no large-scale lobster fishing since 1990 (Aiken and Kong, 2000).

The fishing industry is primarily small-scale in operation. There are over 15.000 registered fishers but estimates indicate that there may actually be over 20.000 Jamaicans engaged full and part-time in fishing. The fishers operate from some 186 fish landing beaches, including the offshore Pedro and Morant Cays. There are three different fishing métiers; small-scale divers, small-scale trappers and industrial trappers. Fishers use a variety of gears varying from fish traps, beach seines, tangle and gill nets, followed by spearfishing, diving and some use of illegal explosives. Lobster fishers use traps (chicken wire Z traps as well as wooden traps for the industrial fleet). Lobster divers use SCUBA equipment or hookah (diving with tubes from a small air compressor) or are free lung divers.

Fishers can be day trippers on the southern shelf but fishers can also live on the offshore cays more or less permanently. These resident fishers are serviced by larger packer boats operating from the mainland, carrying supplies to the cays and the daily catch to the mainland markets. In addition to offshore small-scale fishers there are larger independent industrial fishing vessels which operate offshore or along the Pedro and Morant Banks (Gustavson, 2002). Currently there are only four industrial boats in operation and its processing plant is the only one of two official plants that is allowed to export to the United States.

The organizational structure of fishing activities (fishing, processing, marketing, etc.) varies according to the type of fishery (industrial versus small-scale, inshore versus offshore, as well
as by target species). Small-scale fishers mostly sell their catch to beach vendors, middlemen or packer boats (also a form of middlemen at the Pedro and Morant Banks). The greater part is sold to hotels and restaurants and a smaller portion is destined for export (Venema, 2004). Fishers are inadequately organized as only 6% is member of a cooperative (Kong, 2006). Although Jamaican fishers have formed cooperatives in some areas many of these cooperatives have failed because of lack of cooperation amongst the fishers. In many cases cooperatives are only used as a way to get cheap supplies.

In Jamaica restrictions and regulations regarding the lobster fishery have been established. There are laws regarding the minimum size, a closed season and laws prohibiting the catch of berried females and molting lobsters. The Fisheries Division however is poorly staffed and lacks necessary budget to carry out their regulations.

In Jamaica 30% of the total lobster sampled was under the minimum size as described in the Fishing Industry Act of 1975 (FAO 2007) while the inshore fishery of Jamaica is believed to be severely exploited (FAO 2007).

The results of the job satisfaction surveys per category (see fig. 2) show that the category Nature scored highest, followed by social needs, basic needs, whereas self-actualization and management score equally low. Mean values for all scores, except those for management, fall above the mid-point of 3 indicating general satisfaction with the other four categories of job satisfaction. The results for the category Nature is rather striking as the fishery is believed to be highly overexploited. Nevertheless fishers are satisfied with the landing sites and level of stocks. This could be related to the fact it is a multi-species fishery and fisher have a different seaproduts they can catch when one product is low.

The category social needs is second, closely followed by basic needs. Social needs relates to fishers satisfaction to be their own boss, and the time they have available to spend with family and friends. In fact, the question on the respondents’ satisfaction with ‘being their own boss’ is the highest scoring item of all.

The fact fishers are satisfied with the basic needs category could be related to the fact it’s a multi-species fishery whereby fishers are able to target conch and fin-fish during the closed season for lobster. The fishers rate their satisfaction with their ability to provide for their family’ very high (third highest scoring item in the survey). They are also very satisfied with
their level of earnings which could maybe also be related to the fact it’s a multi-species fishery where fishers are never out of income any time of the year. Management nevertheless scores relatively low, fishers are clearly less satisfied with the “level of conflicts” as well as with the “performance of government officials” and “rules and regulations” of the fishery. This could relate to the governments’ inability to enforce rules and regulations due to lack of funds.

In Jamaica the job satisfaction surveys examines factors influencing willingness to change fishing type, leave the occupation of fishing or advise a young person to fish. In the Jamaican sample 62 percent said they were unsure, 23 percent said they would not and 15 percent said they would change fishing type. A full 46 percent said they would leave fishing for another occupation, while 39 percent were unsure and 15 percent said no. With regard to advising a young person to enter the occupation, almost all (85 percent) said yes, 11 percent said they were unsure and only 4 percent said no. These responses indicate an ambivalence concerning the occupation, but the large percentage reporting that they would advise a young person to fish seems to be a rather positive evaluation of fishing as an occupation.

We first examine these responses in relation to background social variables (tables 2 through 5). For analytic purposes we grouped “no” and “undecided” together so that cell frequencies would be large enough to permit statistical analysis. Tables 3 and 4 indicate that there are no statistically significant relationships between willingness to change fishing type or change occupation altogether and the four social background variables. The only statistically significant difference is that those with more education (mean 12 years) are less likely than those with less education (mean 10.6 years) to advise a young person to enter the occupation of fishing (table 3).

<table>
<thead>
<tr>
<th></th>
<th>Advise young to fish</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
</tr>
</thead>
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<tr>
<td>Basic Needs</td>
<td>No</td>
<td>8</td>
<td>3.5455</td>
<td>0.266155</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>18</td>
<td>3.5808</td>
<td>0.373058</td>
<td>0.241</td>
</tr>
<tr>
<td>Social Needs</td>
<td>No</td>
<td>8</td>
<td>3.7750</td>
<td>0.377018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>16</td>
<td>3.9375</td>
<td>0.27669</td>
<td>1.322</td>
</tr>
<tr>
<td>Self Actualization</td>
<td>No</td>
<td>8</td>
<td>3.7083</td>
<td>0.33044</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>18</td>
<td>3.4444</td>
<td>0.412231</td>
<td>1.592</td>
</tr>
<tr>
<td>Management</td>
<td>No</td>
<td>8</td>
<td>3.0417</td>
<td>0.671116</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>18</td>
<td>3.3796</td>
<td>0.327426</td>
<td>1.747*</td>
</tr>
<tr>
<td>Nature</td>
<td>No</td>
<td>8</td>
<td>3.3750</td>
<td>0.582482</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>18</td>
<td>3.6667</td>
<td>0.514496</td>
<td>1.262</td>
</tr>
</tbody>
</table>

* = p < 0.05 (one-tailed test)

Table 2: Mean values of social background variables by willingness to change fishing type in Jamaica
<table>
<thead>
<tr>
<th>Change Occupation</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
</tr>
</thead>
</table>
| Age
| No / ? 14 | 31.64 | 8.317 |
| Yes 12 | 29.67 | 4.228 | 0.743 |
| Education
| No / ? 14 | 10.43 | 1.604 |
| Yes 12 | 11.33 | 1.303 | 1.561 |
| Years Fishing
| No / ? 14 | 10.50 | 5.841 |
| Yes 12 | 8.42 | 4.852 | 0.979 |
| Household Size
| No / ? 14 | 2.57 | 1.651 |
| Yes 12 | 2.33 | 2.015 | 0.331 |

* = p < 0.05

Table 3: Mean values of social background variables by willingness to change occupation in Jamaica.

<table>
<thead>
<tr>
<th>Change Occupation</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
</tr>
</thead>
</table>
| Basic Needs
| No / ? 14 | 3.55195 | .939671 |
| Yes 12 | 3.09848 | .318379 | 1.591 |
| Social Needs
| No / ? 14 | 3.61429 | .432981 |
| Yes 12 | 3.38333 | .385730 | 1.425 |
| Self Actualization
| No / ? 14 | 3.30952 | .497245 |
| Yes 12 | 2.86111 | .481125 | 2.327* |
| Management
| No / ? 14 | 3.21429 | .617617 |
| Yes 12 | 2.69444 | .809768 | 1.623 |
| Nature
| No / ? 14 | 4.00000 | .480384 |
| Yes 12 | 3.50000 | .603023 | 2.353* |

* = p < 0.05 (1-tailed test)

Table 4: Mean value of job satisfaction categories by willingness to change occupation in Jamaica.
Table 5: Mean value of job satisfaction categories by willingness to advise a young person to enter the occupation of fishing in Jamaica

<table>
<thead>
<tr>
<th>Category</th>
<th>Advise Young to Fish</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Needs</td>
<td>No / ?</td>
<td>4</td>
<td>2.88636</td>
<td>.465770</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>22</td>
<td>3.42562</td>
<td>.764927</td>
<td>1.351</td>
</tr>
<tr>
<td>Social Needs</td>
<td>No / ?</td>
<td>4</td>
<td>3.35000</td>
<td>.412311</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>22</td>
<td>3.53636</td>
<td>.424876</td>
<td>0.810</td>
</tr>
<tr>
<td>Self Actualization</td>
<td>No / ?</td>
<td>4</td>
<td>2.41667</td>
<td>.419435</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>22</td>
<td>3.22727</td>
<td>.452931</td>
<td>3.322*</td>
</tr>
<tr>
<td>Management</td>
<td>No / ?</td>
<td>4</td>
<td>2.54167</td>
<td>.643702</td>
<td></td>
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<tr>
<td></td>
<td>Yes</td>
<td>22</td>
<td>3.05303</td>
<td>.659719</td>
<td>1.126</td>
</tr>
<tr>
<td>Nature</td>
<td>No / ?</td>
<td>4</td>
<td>3.75000</td>
<td>.500000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>22</td>
<td>3.77273</td>
<td>.611930</td>
<td>0.070</td>
</tr>
</tbody>
</table>

* = p < 0.05 (1-tailed test)

Willingness to change is expected to be related to levels of job satisfaction—the higher the satisfaction the less willing a fisher should be to change fishing type or leave the occupation of fishing, and the more willing they should be to advise a young person to fish. Mean values on job satisfaction categories in relation to responses to these questions are examined. Since we are predicting the direction of the relationship, one-tailed statistical tests of significance are used.

Results indicate that those more satisfied with Management are less likely to say they would change their fishing type (table 2). This result is to be expected. Fishermen scoring lower on the Self Actualization and Nature categories of job satisfaction are more likely to report that they would leave the occupation of fishing (table 4) and those more satisfied with the Self Actualization fishing provides are more likely to encourage a young person to enter the occupation (table 5). It should be noted that although many of the differences displayed in tables 3 through 5 are not statistically significant, they are all in the predicted direction.

Job Satisfaction of lobster fishers in the Dominican Republic

The Dominican Republic is located in the middle of the Caribbean Sea. The whole country measures 48,000 km² with a large coastline of 1,575 kilometers. This coastline harbours the majority of the almost nine million people is concentrated. However, its marine fisheries are not very developed and no more than 8,640 fishers concentrated in 165 landing sites (Cecilio Díaz, 2004).

The Queen conch (Strombus gigas) and lobster (Panulirus Argus) constitute currently the two main species targeted in Dominican Republic fisheries, taking into consideration the volume of their catch; the third is the King mackerel (Scomberomorus cavalla) (searoundus, 2006).
Although landings of conch and lobster have increased dramatically since 1980 periods of increase have been offset by periods of spectacular decline. The local production of seafood product of 13,000 MT is not enough to feed the national demand and yearly 39,000 MT of seafood products are imported. This high demand is due mainly to the large tourist industry present on the island (Infante, 2007).

The lobster yield of the country from 2000 to 2005 was estimated between 2,451 and 802 metric tons and the mean in 1,286 metric tons (Dirección de Recursos Pesqueros, 2006). In the country 1,200 fishers (Infante, 2007) or up to 2,000 (Nolasco, 2006) are dedicated to lobster fishing producing annually 13,000 MT of lobster. The fishery has mostly been small-scale however an industrial fleet in the north has also developed. The most productive lobster fishing areas are the National Park of Jaragua, and Bancos de la Plata and La Navidad as well as in the north of the island. The main gears are basket trap and diving. Especially by Bancos de La Plata and La Navidad 900 divers are active fishing for lobster with aircompressors (Infante, 2007).

The catch is mainly sold at the local market and restaurants and supermarkets (Infante, 2007). Only a small portion of the catch is designated for export. Local demand is very high due to large tourist industry on the island.

In the early 1960s the harvest of lobsters in the Dominican Republic was irrelevant as it was all the fisheries of the country. This condition did not change during the 1970s. However it was necessary to implement management policies to protect lobsters. At this time there was concern about lobster overfishing (Idelisa Bonnelly, s/f) and the catch of juveniles. For those reasons, in 1970 it was prohibited, by the law No. 565 the trade of lobsters with size smaller than 24 centimeters, from their eyes to their tails (Gaceta Oficial No. 9187, 1970). From the early 1980s the harvest of lobster began to grow in the Dominican Republic. It was an irregular but persistent process. In the early 1990s the production of lobster expanded in a very high dimension, reaching volumes never seem before. The catch of lobster had been the most profitable type of fishery in Dominican Republic. For instance, in some places, like Jaragua National Park, in the Southwest coast, one of the richest sanctuary of lobster in the country, yield of this specie represent only 25% of the whole fisheries, but it is more than the 70% of profits for fishers (Infante, 2006).Fishers are mostly small-scale fishers making use of three types of small craft: cayucos, yola and fiberglass boats. There is also a small fleet of industrial vessels. All small-scale craft take a crew of one or two people. In accordance with the size of the craft used, fishing trips are short and last not longer than 8 to 10 hours a day. Hand lines, basket traps, different kinds of nets and simple diving equipment constitute the main fishing gear (Cecilio Díaz, 2004). In case of the industrial fleet fishers stay away for 20 days.

All five categories show results higher than 3.3 indicating a general satisfaction with their job. In the Dominican republic the results of the job satisfaction survey show that the categories scored from highest to lowest as follows; social needs; actualization; basic needs; management and the value of nature.

The high score of the social needs category could be related to the fact all respondents are small-scale fishers. These are fishers living in a small coastal community where they take part in every day life. Respondents are most satisfied with the items “the community in which they live” and “the time available to recreate”. The satisfaction with the community in which you live'is in fact the highest scoring item in the survey. There is therefore no doubt of the recognition of fishermen in the community. The highest scoring for this variable indicates that they are adapted to their social environment.

As fishers only work as day fishers, they are home every day to spend time with their family and friends and thus explains the high score of “time available to recreate”. In the small-scale fisheries of the Dominican Republic a fishing journey lasts from five to ten hours, depending on the metier and of course on the distance.
Self-Actualization and Basic Needs also have high scores. The high score of self-actualization shows fishers feel proud on their job. This relates in specific to the high score on “worth of the Job”. The economic activity is considered to be very important. Although the income derived from the activity might be low, fishers are satisfied with the “adventure” and “challenge” their job offers.

In the variable “Basic Needs” the respondents are most unsatisfied with the items Physical Safety and Physical Fatigue, included in the five worst scored questions, and “Level of Earning”. The scoring for the first of these three items is something not very difficult to understand taking into account the bad condition and small size of many vessels, the poor condition of some gears and even the lack of minimum equipment like life vest jackets. Moreover the hurricane season that lasts six months in the Caribbean region aggravates the condition of physical safety for fishermen. Concerning the scoring for the “Level of Earning” this is also something easy to understand in a population of small-scale fishermen, with low and unstable incomes as fishers depend in the size of the catches. They are not wage labours but their income is based on the level of catches of that day.

The categories “Management” and “Value of Nature” score lowest however still above 3.3 points indicating a general satisfied feeling towards these categories as well. In the Management category especially the questions concerning the government (specifically in the “Feeling about the performance of government officials” and in the “Rules and Regulations available in Fishery”) scored very low. The ranking for these two items shows the concern of the fishers about the role played by the government in the fisheries of the Dominican Republic. In the country the relationship between fishermen and government occurs through the Secretary for the Environment and Natural Resources. There is an Under Secretary for the Marine and Coastal Resources and the Consejo Dominicano de Pesca y Acuicultura (CODOPESCA) is another public entity that is directly responsible for fisheries management. Outside the new general fisheries law of the year 2004, in the Dominican lobster fishery rules and regulations are established regarding; a closed season of four months; the prohibition of catching berried females and a minimum size. There is a General Law for the Environment that manages the fisheries in the Marine Protected Areas of the country. The enforcement of all this legislation is under the supervision of many fisheries inspectors that work directly with fishermen in the landing sites.

In the variable “Valuation of Nature” which includes two items, the lowest scoring corresponds to the “Conditions of the Fish Stock”. It is crucial to remember that this is the worst scored item in the research. This tells us that the respondents are very aware of the depletion of the sea around them. Furthermore, they are concerned with the magnitude of this problem that primarily affects them.

In relation to the three general questions it appears as though the respondents gave slightly contradictory answers. A majority (62%) was in opposition to shift to another métier. A slighter majority (51%) also agreed to advise a young person to enter the fishing profession.

Contrary to these signals, a majority comment should be addressed also, however, voiced agreement with the idea to shift to a job outside fishing.

The first figures suggest that respondents feel satisfied and comfortable within their métiers. The last figure, however, indicates that, if the conditions are right, they would be willing to move out of fisheries. Ruiz (2006) found a similar situation in the town of Boca de Yuma (DR), where only four out of twenty fishermen said that they were fishing because of the job and not only for the money. It is important to stress that the willingness to shift to other jobs out side of fishing is linked to problems in meeting basic needs. The responses with regard to the variable ‘social needs’, indicates that cultural aspects of fisheries are highly appreciated. In the words of Pollnac and Poggie (2006), also for them “…their job is more than just a job, it is a lifestyle….”
Conclusion

The results of the different categories used show very similar results between Nicaragua and the Dominican Republic. In both fisheries the social needs category, basic needs and self-actualization all score high. The category nature however scores much lower in the results of the DR whereas in Nicaragua the category management scores significantly lower (see fig. 3) In comparison to the results of the Dominican Republic and Nicaragua Jamaica scores lower in all categories except for the category the value of nature. This category scores highest in Jamaica. Between Jamaica this is mainly caused by differences in satisfaction with landing site. The scores on ‘fish stocks’ are very similar (3.4 in Nicaragua and 3.5 in Jamaica) so the main difference is caused by greater difference in satisfaction with landing site (3.8 and 4.1 respectively). In both countries it is believed overexploitation is very high so fishers’ equal satisfaction with the level of stocks appears just. In the Dominican Republic however the satisfaction with ‘level of stocks’ is dissimilar as results show this is lower (3.1) whereas satisfaction with landing site is 3.6.

Overall it can therefore be concluded that even though both Jamaica and the Dominican Republic share certain characteristics such as a multi-species fishery, large part of lobster fishery being designated for national market rather than international market, the results are dissimilar. Fishers in the DR are more satisfied than fishers in Jamaica across most categories. The DR and Nicaragua show similar results although Nicaragua on average, lower results over most categories. The high results of fishers in the DR could be related to their short absence away from home, only daytrippers, and the small boats used, increasing their satisfaction with social needs category. Due to the use of small boats, many of the fishers work with a very small number of fishers on board, sometimes alone. This could lead to higher results for self-actualization, and higher basic needs.

Fig 3 Mean values and confidence intervals for job satisfaction categories in Dominican Republic, Jamaica and Nicaragua

These results indicate towards the advantage of small-scale fisheries close to shore. Fishers in both Jamaica and the Dominican Republic appear to have an advantage of having a multi-
species fishery and therefore having both more income as well as more economic alternatives during the closed season. Nevertheless fishers in the Dominican Republic are higher suggesting a fishery where fishers work close to shore on one day trips receives higher levels of job satisfaction. Policies aimed at decreasing the industrial fleet combined with inshore fisheries possibilities would result in the highest job satisfaction results.

Acknowledgements

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Bibliographie


Notes

1 In this paper the term Caribbean Basin is used rather than Caribbean as this term refers to the entire area running from Florida westward along the Gulf coast, then south along the Mexican coast through Central America and then eastward across the northern coast of South America. This region therefore also includes the Central American states bordering the Caribbean Sea.

2 Ecosystems, Societies, Consilience, and the Precautionary Principle: Development of an assessment method of the societal cost for best fishing practices and efficient public policies. A research project

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Fishers’ job satisfaction in the Caribbean

of the European Sixth framework Programme, International research in cooperation area, Priority a.2.2: Reconciling multiple demands on coastal zones. EC Contract No. 003711

3 The six provinces were: Monte Cristi, Puerto Plata, Espaillat, María Trinidad Sánchez y Samaná, in the Noth Coast and La Altagracia in the East Coast.

Pour citer cet article

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Résumé / Abstract

De nombreuses recherches ont été réalisées ces dernières années sur le contentement au travail. Les résultats ont montré que l’activité de pêche n’est pas simplement un moyen de gagner de l’argent mais qu’elle résulte bien plus d’un choix délibéré. L’article expose les résultats d’enquêtes menées auprès de pêcheurs de langouste en République dominicaine, au Nicaragua et en Jamaïque. Globalement la satisfaction que les pêcheurs ont de leur travail est bien plus importante pour les pêcheries artisanales que pour les pêcheries plus fortement dotées en capital.

Mots clés : Caraïbes, Travail, Pêche, Langouste

La satisfaction au travail des pêcheurs dans les Caraïbes

A variety of researchers have carried out job satisfaction studies in fisheries during the last decades. Results have shown the significant role of self-actualization in the determination of job satisfaction which backs the reasoning that fishing is more than just a livelihood. This paper is based in a job satisfaction study carried out in three lobster fisheries in the Caribbean. Lobster fishing (Panulirus argus) is an important economic activity throughout the Caribbean Basin, both as a source of income and employment for the local population as well as foreign exchange for national governments. These countries differ significantly in structure of the fishery as well as governance arrangements. In this paper we wish to address the relation between these structural differences and fishers’ job satisfaction across the three countries. Results indicate fishers’ job satisfaction is significantly higher in small-scale fisheries.

Keywords : Caribbean, Job satisfaction, Fishery, Lobster