


<b>FISHERY AND AQUACULTURE COUNTRY PROFILES</b>	<b>Food and Agriculture Organization of the United Nations</b>	FID/CP/BHS
PROFILS DES PÊCHES ET DE L'AQUACULTURE PAR PAYS	Organisation des Nations Unies pour l'alimentation et l'agriculture	
PERFILES SOBRE LA PESCA Y LA ACUICULTURA POR PAÍSES	Organización de las Naciones Unidas para la Agricultura y la Alimentación	May 2009

## NATIONAL FISHERY SECTOR OVERVIEW

### THE COMMONWEALTH OF THE BAHAMAS

#### 1. GENERAL GEOGRAPHIC AND ECONOMIC DATA

Area	13 935 km <sup>2</sup>
Shelf Area	116 550 km <sup>2</sup>
Length of Coastline	approximately 3 000 small islands & cays
Population (2000 Census)	303 611
(2008 est.)	338 300
GDP (2005; provisional)	USD 5.986 billion*
GDP per head (2005; provisional)	USD 18 409*
Agricultural GDP (2005; provisional)	0.4%**
Fisheries GDP (2005; provisional)	1.6%**

\*Dept. of Statistics, Government of The Bahamas

\*\*Calculated from Department of Statistics data

#### 2. FISHERIES DATA (2005)

ITEM	PRODUCTION	IMPORTS	EXPORTS	TOTAL SUPPLY	PER CAPUT SUPPLY
	tonnes live weight				kg/yr.
Fish for direct human consumption	9 074	6 838	4 879	9 833*	30.4
Fish for animal feed and other purposes.	2 000		-	2 000	

\*Reduced to account for estimated consumption by non-residents and carryover of stocks from one year to the next

<b>Employment</b> (1995 Fisheries Census): 9 300
<b>Gross Value of Fisheries Output at Ex-vessel Prices</b> (2007): USD 80.3 million
<b>Trade (2007):</b>
Value of Imports: USD 17.8 million
Value of Exports: USD 83.4 million

### 3. FISHERY SECTOR STRUCTURE

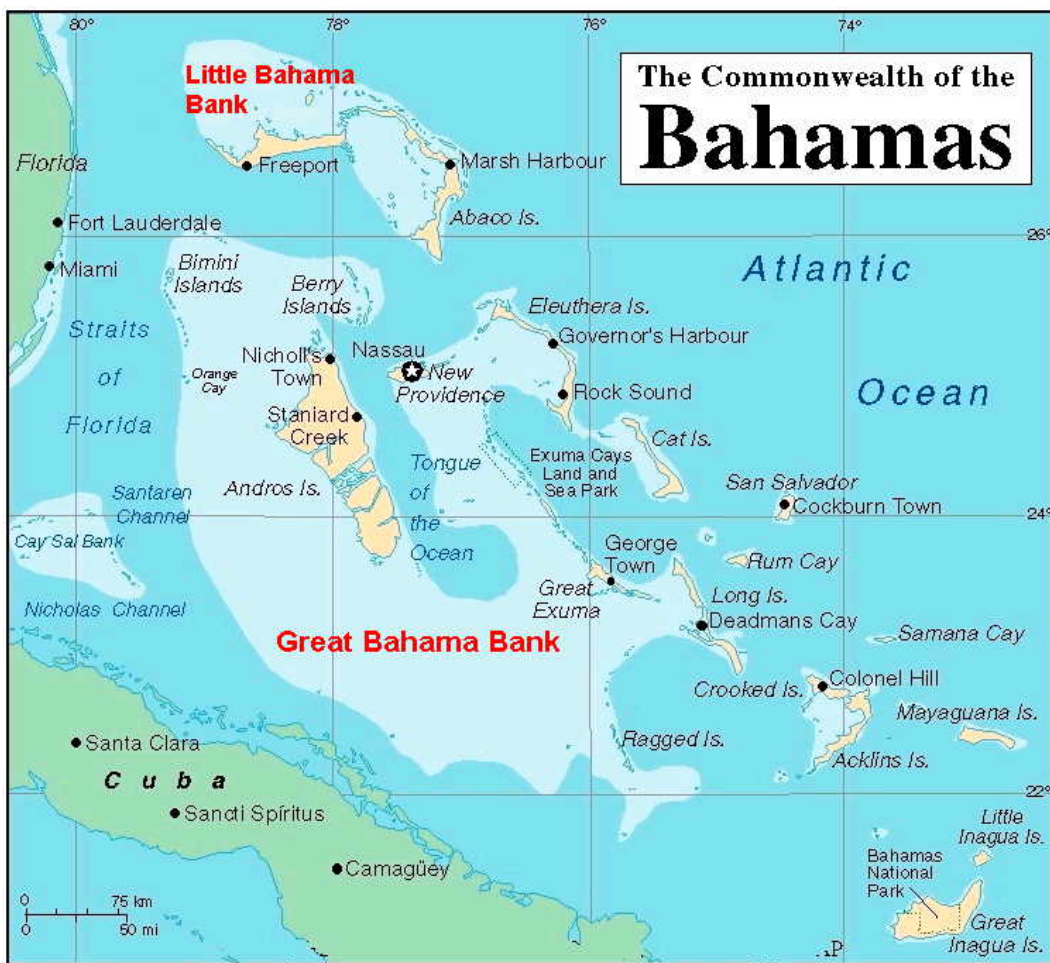
#### 3.1 Overall fishery sector

The Commonwealth of The Bahamas has a total continental shelf area of approximately 116 550 km<sup>2</sup>. It consists of roughly 3 000 small islands and cays with a land area of about 13 935 km<sup>2</sup>. These islands and cays are spread over an area of some 230 000 km<sup>2</sup> and are located on 16 plateaus separated from each other and from Florida, Cuba and Hispaniola by depths of 200 – 2 000 fathoms.

Commercial fishing takes place on the continental shelf, mainly on the Great Bahama Bank and Little Bahama Bank (Figure 1). These two banks make up the majority of the 116 550 km<sup>2</sup> of shelf, however, other significant banks exist and also sustain fishing activities.

Diversity of species and clarity of water are notable. This supports the relatively high total fisheries production over vast fishing grounds.

Figure 1: Map of The Bahamas



### **3.2 Catch Profile**

In terms of landings in weight the most important fishery resources obtained from the Bahamian Exclusive Fishery Zone in 2007 included (in descending order): spiny lobster (*Panulirus argus*), snappers (various species), queen conch (*Strombus gigas*), Nassau grouper (*Epinephelus striatus*) and jacks (various species). In 2007 the live weight equivalent of spiny lobster landings totaled 6 977 t. Approximately 99% of landed lobster is in the form of tails (2 320 t in 2007). Spiny lobster landings also represented 84% of total landings (live weight) in 2007. See Table 1 for a breakdown of landings composition by species.

### **3.3 Landing sites**

Landing sites for fishing vessels are found throughout the Bahamas. Twelve of them are considered as major landing centres. The islands of New Providence, Grand Bahama, Abaco, Eleuthera and Long Island are home to most of the prominent landing sites (Figure 1).

### **3.4 Fishing production means**

The 1995 fisheries census revealed that there were approximately 9 300 full-time fishers and over 4 000 small boats and vessels. It is believed that over 95% of fishers target spiny lobster.

Commercial fishing vessels range in size from 3.35 m to 30.5 m. There is often a "mothership" vessel that works with up to eight smaller vessels. Some vessels stay at sea up to 5 weeks and may land up to 18 000 kg at one time but more generally 9 000 kg of lobster tails. Virtually all lobster are landed as tails. Partial processing occurs at sea and results in the carapace being discarded at sea.

Fishing gears that are utilized include spears, the lobster hook, compressors, lobster traps, casitas and fish traps. In the primary fishery (lobster fishery) lobsters are caught with the aid of casitas (locally known as condominiums). Use of casitas is the predominant method of fishing for spiny lobsters and has increased in popularity since the mid 1980s. They usually consist of a sheet of zinc coated metal placed on treated lumber and/or concrete blocks and are effective at aggregating lobsters. Once lobsters have aggregated, fishers lift the sheet of zinc and immobilize the lobsters, one at a time, with the help of a lobster hook. The majority of lobsters under the casita are caught before they find refuge elsewhere and after that, are either released or retained depending on their size.

Use of compressors has also gradually increased while the use of lobster traps has decreased since the late 1980s. The records kept in the Department of Marine Resources show that approximately 60 000 lobster traps are in use while the number of casitas in use is unknown.

It is estimated that the proportion of lobsters caught using casitas in the total lobster catch peaked during 1995-1997 and has remained unchanged since then. A typical casita lasts about five years and is not usually removed from the sea except to be relocated, although relocation is not very common. Large scale replacement occurs following hurricanes.

### 3.5 Main resources

Because of its abundance and high price the Caribbean spiny lobster is the foundation of the Bahamas fishing industry. It contributed USD 70 million out of the USD 80 million value of landings recorded during 2007. The queen conch is second in terms of value and third in terms of weight (Table 1).

**Table 1: Recorded Landings of Commercially Exploited Species-2007**

Resource	Live weight (tonnes)	Value (USD)
spiny lobster	6 976.74	70 366 282
snappers	568.56	2 848 370
conch	378.98	3 051 282
nassau grouper ( <i>Epinephelus striatus</i> )	157.44	1 592 827
jacks	83.50	619 452
other grouper	59.01	401 214
grunts	39.25	102 967
stone crabs	30.97	582 527
other	28.62	114 235
grouper fillet	6.67	64 374
turtle ( loghd )	1.07	3 880
TOTAL	8 330.81	79 747 410

### 3.6 Management applied to fisheries

The Government of the Bahamas reserves commercial fishing within the exclusive economic zone, as far as is practical, for exploitation by Bahamian nationals. Commercial fishing vessels must be 100% Bahamian owned. Foreign investment is allowed within the processing sector and in aquaculture. However, all investment projects with non-Bahamian interest must have the approval of the Bahamian National Economic Council (NEC).

Foreign fishing vessels have easy access to the sports fishing industry but must follow the strict bag limits<sup>1</sup>.

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<sup>1</sup> Sport fisheries bag limits and other selected limitations are as follows:

Any migratory fishery resources, (such as Kingfish, Dolphin, tuna or Wahoo) that is caught shall not number more than 18 fish aboard the vessel at any time. Any Billfish (such as Marlins, sailfish or swordfish) shall be returned to the sea unharmed except where landed under the terms of an approved sportsfishing event or tournament. No vessel shall have on board at any time turtle, conchs exceeding 6, crawfish exceeding 10 or other demresal fishery resources exceeding 60 pounds or 20 fish.

Regulations encompass all commercial fishery resources and species specific regulations are in place under the Fisheries Resources (Jurisdiction & Conservation) Regulations 1986. The fisheries regulations also regulate the use of fishing gear. These include:

1. SCUBA diving for any fisheries resource is prohibited.
2. There is a lobster closed season of April 1<sup>st</sup> through July 31<sup>st</sup>. Restaurants must also declare all quantities that are in storage at the onset of the closed season.
3. Compressors can be used for commercial fishing only when the lobster season is open and only if the user is in possession of a permit.
4. Use of spears is prohibited within 1 mile of the southern coastline of New Providence and Grand Bahama as well as within 200 yards of other islands.
5. Only hand held spears or Hawaiian slings may be used.
6. Noxious chemicals cannot be used for fishing and permission is needed to have them aboard a vessel for cleaning purposes.
7. There are limits on the types of nets, traps and mesh sizes that can be used.
8. Harvesting and possession of egg bearing lobsters is prohibited.
9. Possession of lobster tails that have had the swimmerettes removed is prohibited.
10. The minimum harvestable size for spiny lobsters is 3<sup>1</sup>/<sub>4</sub> in (82.6 mm) carapace length and 5<sup>1</sup>/<sub>2</sub> in (139.7 mm) tail length. The regulation regarding tail length is only enforced when the carapace is absent.
11. Traps utilized in the lobster fishery must be made of wooden lathes and the dimensions must be 91.4 cm x 61 cm x 61 cm with slats no less than 2.54 cm apart unless there is authorization to do otherwise.
12. The Minister responsible is empowered to declare closed areas.
13. Aquaculture operations require a licence.
14. Conch must have a well formed flaring lip in order to be harvested.
15. It is illegal to sell bonefish (*Albulidae* sp.).
16. There are closed seasons for turtle<sup>2</sup> and stoned crab<sup>3</sup>.
17. There are size limits for various species of sponges.
18. There is a minimum size limit of 3 lbs (1.36 kg) for all groupers.

Other measures that are in place include:

1. Closed seasons for the Nassau grouper fishery have been declared in most years since the late 1990s and have had varying durations up to a maximum of 3 months during the December- February spawning season.
2. The limits of sports-fishing bags have been modified during 2006 and 2007.
3. In 2009 three new marine protected areas were declared.
4. An export quota for queen conch<sup>4</sup> is set annually.

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<sup>2</sup> The closed season for turtles is from April 1<sup>st</sup> through July 31<sup>st</sup>. this does not apply to hawksbill turtle, which is completely off limits.

<sup>3</sup> the closed season for stone crab is June 1<sup>st</sup> through October 15<sup>th</sup>. In addition, there is a minimum size limit of claw length 4 inches and no person shall take, sell or buy any female stone crab.

<sup>4</sup> The annual export quota is determined by the minister responsible, namely the Minister of Agriculture and marine Resources, who takes into consideration the advice of the Department of Marine Resources.

### **3.7 FISHING COMMUNITIES**

Fishing communities are located throughout the Bahamas islands. However, the major commercial fishing communities are generally located in close proximity to the landing sites mentioned in section 3.3.

There are no communities based on or heavily depending on aquaculture.

### **4. POST-HARVEST USE**

The vast majority of harvested fishery resources are for human consumption. Conch and fish are mostly consumed locally although significant exports also take place. Tourists, many from the US, are an important component of the local market. Over 90% of spiny lobsters is exported. The major markets of locally consumed products are restaurants, hotels and home consumption.

There is also a local market for conch shell jewelry and artwork and a budding market for fish scale jewelry. Neither of these markets has placed additional pressure on fishery resources as no additional conch or fish are caught to supply these markets. Demand does not require additional conch or fish to be caught.

Fishery products are also transported from other Bahamian islands to New Providence, the main market, by approximately 23 so-called "mail boats" which assure a large part of the inter-island commerce. In some instances fishers bring their products directly to New Providence aboard their own vessel although their home base is located on another island.

Major export markets include the USA, Canada, Japan, France and Germany. Exports also occur to Cyprus, Greece, Italy and Spain.

### **5. FISHERY SECTOR PERFORMANCE**

Subsistence and commercial fishing activities make a major contribution towards preventing rural to urban drift. In some instances rural communities thrive due to commercial fishing activities with relatively high standards of living. In some instances communities undergoing hardships due to the lessening of employment alternatives heavily depend on fishing for subsistence and income.

Sportsfishing also contributes to rural development on islands other than New Providence. In particular, bonefish lodges attract foreign tourists interested in catch and release fishing. Sportsfishing is also an avenue through which foreign exchange enters the country.

The Bahamas benefits significantly from export earnings due to commercial fishing, having earned USD 83.4 million from exports of fished resources in 2007. Of this, 96% (USD 80.2 million) was due to spiny lobster exports. Landings in 2007 were valued at USD 80.3 million.

### **6. FISHERY AND AQUACULTURE SECTOR DEVELOPMENT**

In terms of incorporating technical expertise into fisheries management, the Bahamas has benefited through avenues provided by international and regional organizations, such as the Western Central Atlantic Fishery Commission (WECAFC) and the Caribbean Regional Fisheries Mechanism. These benefits have been obtained

largely through attendance at workshops that have dealt with a large variety of subjects ranging from enforcement matters, management plan development, to stock assessment and economic matters.

Aquaculture production is negligible. Tilapia farming was the only aquaculture practice in freshwater with the highest production from mid 1980s to early 1990s, ranging between 4 – 55 tonnes annually. Two marine finfish species, florida pompano and red drum, have been cultured in the country since the late 1980s but with limited production recorded for a few years only. Between 1984 and 2005, white-leg shrimp was cultured with annual production fluctuating between 1 - 42 tonnes. No aquaculture production was reported for the year 2007. The Chinese government has assisted in aquaculture development by providing training in various aspects of aquaculture.

Approximately 30 aquaculture farms have been licensed within the last 30 years. They were typically in operation for only a 1 – 3 year period. However, two (one commercial oriented and 1 research oriented) have persisted since the late 1990s to present. Species that have been cultured within the last five years include American pompano (*Trachinotus carolinus*), greater amberjack (*Seriola dumerilli*) cobia (*Rachycentron canadum*) and whiteleg shrimp (*Penaeus vannamei*).

The Department of Marine Resources conducts research to inform management decisions. In some instances, other agencies such as the College of the Bahamas, Marine and Environmental Studies Institute (COB-MESI) work independently or in conjunction with the Department of Marine Resources.

A major ongoing research project on lionfish has enjoyed the collaboration of the Department of Marine Resources with COB-MESI. Lionfish are an invasive species to the Bahamas and research is being done on various aspects of its biology with the ultimate aim of effectively controlling lionfish numbers.

The public sector conducts education activities directed at the fishing sector. One major example is the annual diver safety lectures conducted by the Department of Marine Resources. Public service announcements on radio and television concern matters ranging from lionfish handling to the need to avoid purchasing Nassau grouper during the spawning season. Non-government organizations also provide a variety of printed media that address various fisheries related matters.

Duty free allowances also contribute to the development of the fishing sector. These include traps, fish trap materials, fishing vessels, engines for fishing vessels, bait, feed, fishing gear, freezing units, navigational equipment, reverse osmosis machines, ice-making machines and fishing vessels. There are also duty free allowances in support of aquaculture including procurement of broodstock, bulk feed tanks, feeders, laboratory equipment, eggs, post-larvae and juvenile stock.

Some of the constraints to the development and management of the fishing industry in the vast Bahamian EEZ include challenges faced by the fisheries administration in conducting enforcement, in collecting data and in conducting research, including stock assessments. Consistently allocating the resources needed to address all of these matters poses a tremendous challenge for the Government.

Constraints to aquaculture include the frequency of hurricanes, limited freshwater supply, high surface evaporation and the absence of specific legislation for aquaculture.

## **7. FISHERY SECTOR INSTITUTIONS**

The Department of Marine Resources (formerly named Department of Fisheries) within the Ministry of Agriculture and Marine Resources is primarily responsible for the management and development of the industry. The Department is involved in monitoring, control and surveillance of the fisheries sector. Other government departments are empowered to assist in this regard and play significant roles especially with regard to interdiction at sea. They include the Royal Bahamas Police Force, the Royal Bahamas Defence Force and the Customs Department, which are empowered to enforce regulations made under the Fisheries Resources (Jurisdiction & Conservation) Act 1977.

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