The Fishing Industry Of Jamaica: Brief Notes on its Structure, Socio-economic Importance and Some Critical Management Issues

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Arrangement of Presentation

• Major Elements of the Fishing Industry
• Social and Economic Importance
• Status of the Fisheries Resources
• Some Critical Fisheries Management Issues
• Concluding Remarks
Major Elements of the Fishing Industry

- Major fisheries in Jamaica have both artisanal and industrial components
- Artisanal fishers: over 20,000, operating 9,000 canoes from 184 fishing beaches and 3 offshore cays
- Smaller but economically significant industrial fishery for conch and lobster
- Commercial sports fishery (charter boat and tournament) associated with tourism.
- Small recreational fishery
- Culture fishery: tilapia, marine shrimp and mangrove oysters
Major Components of the Fisheries Sector

The Fishing Industry of Jamaica

- Processing Sector
  - Capture Fisheries
    - Fish
      - Reef Fish
      - Pelagics
    - Shellfish
      - Lobster
      - Conch
  - Culture Fisheries
    - Finfish
      - Tilapia, cellodoma
      - Shellfish
        - Macrobrachium (prawn)
- Production Sector
  - Culture Fisheries
    - Finfish
      - Tilapia, cellodoma
      - Shellfish
        - Macrobrachium (prawn)
  - Capture Fisheries
    - Marine Fisheries
      - Subsistence
        - Reef fish, Pelagics
        - Shrimp, conch, lobster
      - Recreational
        - Reef fish, Pelagics
        - Shrimp, conch, lobster
      - Commercial
        - Conch, lobster
        - Deep slope fish
        - Reef fish
    - Estuarine Fisheries
      - Subsistence
    - Riverine Fisheries
      - Subsistence
      - Recreational
      - Commercial
Major Elements of the Fishing Industry

- Open access fishery except industrial conch and lobster fishery
- Total production 11,327.84 MT (2001)
- Total Exports 956 MT valued at J$437.9 M (2001)
- Imports 30,350.5 MT valued at J$2,191.3 M
Social and Economic Importance

• Nutrition and Food Security
• Poverty alleviation
• Employment
• Creating Opportunities for Women
• Foreign Exchange Balance
• Support for Alternative Income Generating Opportunities
Nutrition and Food Security

• Vital source of both total and animal protein, contributes essential mineral and vitamins to the diet.

• Protein source that is available all year round, often when other sources of food are not.

• Occurs in sufficiently diverse forms to be available to the poor and rich alike and to provide a varied diet for all.

• Particularly important in the diet of the most vulnerable in the society such as those in ill-health, pregnant or very young.
Poverty alleviation

- Many participants in the sub-sector are the poorest and most marginalized and have little or no other economic activity available to them.

- Many from other sectors turn to fisheries seasonally, temporarily or permanently when faced with periodic cycles of unemployment and poverty.
Employment

• Provides a wide range of employment opportunities for many in the community.
• Fish harvesters, processors, traders, pot-stick cutters, pot makers, boat builders, net makers and ice suppliers etc.
• Person who earns money by scaling and gutting fish or those that help to load the boat before it goes to sea and off-load the fish, conch or lobster when it comes back to port. In many cases this is their only or major source of employment.
• The employment may be part-time and may be of vital complement to other activities such as farming or petty trading.
• Fisheries may also provide seasonal employment when other sectors are less busy.
Creating opportunities for Women

• Many of the critical roles in fisheries are carried out by women, particularly, those on the shore side of the operation.

• In some areas there are women that go to sea and can hold their own with any of their male counterparts.

• The fisheries sector gives women the opportunity to complement their household income from other sources.

• In some fisheries women are gear and boat owners and achieve considerable wealth and power in the community.
Foreign Exchange Balance

• Fisheries activities contribute directly to foreign exchange generation through the export of fisheries products (e.g., conch and lobster).
• Fisheries also contribute to the balance of foreign exchange by substituting for other protein sources which would otherwise need to be imported.
Support for Alternative Income Generating Opportunities

- Fisheries provide critical support for alternative income generating opportunities.
- In most communities, surplus income generated by fisheries and fisheries related activities provides a growth pole for alternative income generating activities.
- Many of the bars, shops and restaurants were developed with cash earned through fishing.
Support for Alternative Income Generating Opportunities (cont’d)

• Support for shops, bars, restaurants and other place of business come from monies earned through fishing.
• The critical importance of fisheries in coastal communities was underscored by the words of shop and bar owners, “we do not need to look at the sea to know that the weather is too harsh for fishing, when fishing is bad we sell little or nothing.”
Status of the Fisheries Resources

• Except for conch, traditional fisheries resources over-exploited.
• Fish catches decreasing
• Average size of fishes decreasing. Most fishes landed are young adults or juveniles.
• The % of more expensive, high quality fishes (e.g., snappers, groupers) decreasing.
• % of the more in-expensive species (e.g., doctor fish, grunts) increasing.
• These factors are classical signs of over-fishing
• There are too many fishers chasing too little fish.
Critical Fisheries Management

Issues

• Destructive Fishing Practices
• Harvesting During Closed Seasons
• Harvesting Under Sized and Berried Female Lobsters
• Poaching by Foreign Nationals
Destructive Fishing Practices

- Dynamiting
- Poisons and Noxious Substances
- Very Fine Meshed Nets and Traps
- Beach Seines
- Pair Trawling
- SCUBA and Hookah
Harvesting During Closed Seasons

- Lobster – April 1 to June 30, Annually
- Conch - July 31 to January 5 (2003), June 30 to November 1 (2004)
- Closed Seasons Set at the time of peak spawning
- Reduces Fishing Pressure on Resource
Harvesting Under Sized and Berried Female Lobsters

• Legal Minimum Limit Currently Set at 76 mm CL
• Berried Females – Female Lobsters bearing eggs
The Cost of Harvesting Berried Female Lobsters

- 4 females lobster tails bearing eggs weighing 2lbs
- The weight of the tails is one-third the total weight
- Therefore the total weight of the whole lobsters would be the weight of the tails multiplied by three (3), which is equal to 6 lbs.
- Female spiny lobsters produce an average of 830 eggs per gram of body weight
- 1 lb = 454g
The Cost of Harvesting Berried Female Lobsters (cont’d)

- Therefore female lobsters weighing 6 lbs would have produced $830 \times 454 \times 6 = 2,260,920$ eggs.
- After hatching out 1% would have survived and recruited to the Jamaican lobster fishery. Thus $22609.2$ spiny lobsters offspring would have been produced.
- These lobsters would take between 3.8 to 4.5 years to reach legal size of 7.62 cm weighing 1 lb each.
Thus if the 4 berried lobsters were allowed to produce their offspring after 3.8 to 4.5 years, 22,609 lobsters weighing approximately 22,609 lbs would have been available to Jamaican fishers. Recalling that lobster tails are one-third the whole weight, the 22,609 lbs of lobsters would produce 22,609 divided by 3 = 7,536 lbs of tails. At current prices at US$ 16.00 per lb of tails, Jamaica has lost earnings of 16 X 7,536 = US$120,576 as a consequence of destroying 4 berried female lobsters.
Poaching by Foreign Nationals

- Not Restricted to Foreigners
- Poachers Assisted by Jamaicans
- Conch and Lobsters Targeted
- National Total Allowable Catch (NTAC) for Conch Reduced from 2,000 MT in 1994 to 500 MT in 2003
- Sustainable Yield – 900 MT based on Recent Conch Abundance Survey (2002)
Poaching by Foreign Nationals

- Estimate that Poachers will take up to 400 MT

- Consequently NTAC set at 502 MT

- In Order to Ensure the viability of the Conch resource, we have in effect allocated a quota of 400 MT to illegal Poachers!

- This represents 55.83% of the estimated Sustainable yield

- This translates to US$2,645,520
Fishing Vessel, Who is in Charge?

- In the “formal” merchant marine sector the captain of a vessel has ultimate responsibility.
- Authority on fishing vessels differs and is recognized and accepted globally.
- General operations (i.e., navigating to and from a given fishing ground) - captain and chief mate will alternately have full responsibility.
- Actual fishing operations - captain and chief mate have joint responsibility (e.g., locating a suitable fishing site) or sole control over discrete operations (e.g., deployment of fishers, handling and processing of product) integral to the overall fishing operations.
Honduran Conch Vessel, Who is in Charge?

- Captain
- Chief Mate
- Sacar Buzo
- On some vessels the Chief Mate also functions as the Sacar Buzo
Functions of the Captain

- general control over all on board the vessel
- direct control over the chief mate, engineer(s), freezer men, 7 - 8 deck hands and one of the cooks.
- does not control the harvesting, handling, processing and operations of the divers and dory men.
- 20% of value of catch goes to the captain who pays - chief mate, engineer, freezer men, deck hands and the cook.
- divers paid based on the quantity of conch harvested. Each diver pays the sacar buzo an agreed % of their earnings and the dory men and cooks an agreed sum.
Functions of the Chief Mate

- oversee and ensure that harvested conch meat is properly washed, processed, weighed and packaged.
- ensures that the packaged conch meat is properly stored on racks in the freezer where they are set to freeze for at least 24 hours after which the frozen product is stored in the freezer hold of the vessel.
- in addition to being second in command of the vessel in terms of navigating to and from fishing grounds and general control of the crew functions as the processing manager.
Function of the Sacar Buzo

• sources the divers (i.e., the buzo)

• Boat Owner pays the sacar buzo an agreed sum of money for advanced payment to the divers.

• ensures that divers report to the vessel

• controls organize and directs the divers

• Determines with the captain where the divers will fish, supervises the launching of the dories (i.e., the fishing canoes).

• keeps a detail record of the daily catch of each diver.
Factory Vessel

- A Honduran Conch Vessel functions as a Factory Vessel as defined by the Aquaculture, Inland Marine Product and By-Product Act.

- Captain, Chief Mate and Sacar Buzo has joint and discrete responsibilities that are integral to the operation of a Factory Vessel.
Concluding Remarks

• Without proper management, without proper and effective enforcement the outlook for the future of our Fishing Industry is indeed very bleak.

• Urgent action is needed to ensure the gradual rehabilitation of our fisheries.

• Healthy fisheries are synonymous with a healthy marine environment.

• A healthy marine environment is sine qua non if Jamaica is to achieve positive growth and economic prosperity.
FISHING VESSELS

INDUSTRIAL

ARTISANAL

RECREATIONAL

ARTISANAL CARRIER
Artisanal Fishers on the Pedro Bank
Middle Cay, Pedro Bank
Conch Shells on Pedro Cay
Packer Boat Receiving Fish on the Pedro Bank
Antillean Z-Trap
Doctor Fish
Spiny Lobster
Honduran Vessel Caught Poaching on Pedro Bank
Frozen Conch in Hold of Illegal Honduran Vessel
Processed Conch Meat
Major Banks of Jamaica (map data from NRCA Data unit)