

Crab system



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This system of resource extraction is expected to continue in the coming years as the population increases in the next ten years. In Bucolic, the uncontrolled live fish fishing of high valued species like grouper, wrasses and crustacean, lobster, and other species are common particularly in the San Miguel Bay and Sorenson Bay apparently because of the booming export market for these species. Unfortunately, with very little work carried out to manage the wild stock. Given the unregulated resource extraction couple by the alarming impacts of climate change, the fate of this species is extremely threatened.

Considering its importance and value, it is imperative that research effort towards the development of resource enhancement measures would be necessary to sustain an appropriate number of parent stock and/or breeding to be able to maintain its population. The present work on the development of broomstick and hatchery management technique for Christian crab is therefore timely and relevant. The project is expected to provide relevant scientific data and information as basis for the management of the natural stock as well as aquaculture for sustainable fisheries.

This will likewise help decision-makers in concerned Local Government agencies formulate rational management for this highly valuable resource at sustained level. This will also initiate long-term fishing for fishermen. Without proactive move to domesticate and propagate this crustacean species, the Christian crabs will be highly vulnerable and the chance for the collapse of wild population is not far from reality. In addition, the impacts of climate change (I. E. Increasing temperature and high precipitation rate and sea level rise) and volcanic eruptions (I. Falsehoods, mud flows, ash falls), will

put immense pressure, stress and ecological/environmental modification that threatens the resources systems and their habitat, which in turn might cause species extinction and biodiversity loss. Acting now to save the species is an urgent need; the development of hatchery technology is the solution. (11)

Objectives. The primary objective the project would like to achieve is to assess and evaluate the marine crab fisheries in Sorenson Bay and San Miguel. Specifically, it aims to: 1 . Assess the marine crab fisheries in Bucolic Region namely: Lagoons Gulf, Sorenson Bay, San Miguel Bay and Raga Gulf; .

Generate benchmark information on reproductive biology, seasonal abundance, production and level of exploitation and other relevant information; 3. Develop captive breeding and nursery technology for commercially important marines crab species; 4. Develop aquaculture technology for commercially important marines crab species; and 5.

Development of resource enhancement strategy for sustained fisheries. (12)

Review of Literature Related Literature marine crab Crabs are luxury food items noted for their taste, texture and acknowledged to be low in fat, high in protein and are excellent sources of vitamins and minerals.

The market opportunities for crab industry are very promising. As a matter of fact, the Philippines have exported 329 tons in 1991, a shortfall from 477 tons in 1987. In 1992, crab landings reached 51, 800 metric tons mainly mud crabs and other marine crabs, however landings have declined to 38, 000 tons in 1993 (Eldon and Dagon 1997). In Raga Gulf, commercial landings fluctuate yearly and were 641 metric tons in 1994 and 210 metric tons in 1985 (Angles and Braun 1989). Strong demand has increased the price in the domestic markets.

Philippine Fisheries Profile (2002), The Philippines ranked (11th) among the top producing countries in the world for the year 2002 with a notable production of 2.94 million metric tons of fish, crustaceans, mollusks and aquatic plants or 2.1 percent to the total world production of 141.78 million metric tons. Crabs are among the top five (5) of the country fisheries export. The country exported frozen crabs of 100 metric tons amounting to PH 12,804,000 / \$ 267,000. Other than frozen 4,188 metric tons of PH 836,005,000 / and preserved crabs 1,008 metric tons of PH / \$ 13,633,000.

A total of 5,296 metric tons of crabs amounting to PH 1 Philippine Fisheries Profile (2005), in 2003 the Philippines ranked (8th) among the top producing countries in the world with its total production of 3.63 million metric tons of fish, crustaceans, mollusks and aquatic plants. The production constitutes 2.5 % of the total world production of 146.27 million metric tons. The country exported 140 metric tons of frozen crab amounting to PH 23,997,000 / \$ 464,000, Other than frozen 1,909 metric tons of PH / \$ 7,193,000 and 2,380 metric tons of preserved that constitute PH 1,550,702 / \$ 29,972,000.

A total of 4,429 metric tons of crabs amounting to PH 100 / \$37,629,000. The major country destinations of these products are Japan, Hong Kong, Korea and Taiwan. Bureau of Agricultural Statistics (2001), the annual production of mud crab in the country from 1995 was 2,782 metric tons, 1997 of 3,710 metric tons, 1998 of 3,996 metric tons, 1997 of 3,710 metric tons, 1998 was 3,996 and 1999 reached to 4,215 metric tons and increased to 4,495 metric tons in year 2000. While mud crab production has been steadily increasing each year, the supply of seeds has been reportedly declining (Fortes et al. 002), and one of the major sources of seeds from the <https://assignbuster.com/crab-system/>

wild is the province of Canaries Norte. Paradox-Steep et al. (2002), Christian crab *Charladies fermata* is a opportunity crab species widely distributed in the Indo-Pacific region from Japan and China to Australia in the east, to eastern and southern Africa, India, Sir Lankan and Indonesia. It usually occurs sub-literally on muddy and sandy bottoms, as well as in rocky and stony coast including coral reef flats, at depth of approximately 10-60 meters.

This species of *Charladies* is one of the resources of San Miguel Bay, which are caught in trawl, gill nets and filter nets by sustenance fishermen and sold to local market before (Limit et al. 1989). However, with the recent expansion of live fish markets, this is now maintained in aquaria and hold tanks, and exported throughout eastern Asia (Babble and Hispanic 2005). In the preliminary survey conducted by the researcher to crab fishers and buyers, noted that they are harvesting these species for the past five years using crab pot in the bay and outside San Miguel Bay along reef areas. An estimate of 100. Metric tons is harvested annually, 82. 35 metric tons shifted to Manila for export and 18. 45 metric tons are sold to local market. The prices of these crabs are the small PH 100-200, medium PH 300-600 and the large PH 1000-1200 ere kilo respectively depending on the weight classification. The species is a high value product harvested in commercial quantity and considered one of the country dollar earners. Christian crab *Charladies fermata*, a opportunity crab formerly classified as *Charladies crucial* and commonly known as crucifix crab is a commercially important species because of its meat quality, taste and size.

Berried females caught from wild usually weigh from 150 to 350 grams, but the males can grow up to one kilogram in body weight (Fig. 1). This species can be easily identified because of its striking red and white color pattern and the cross design on top of the carapace (Paradox-Steep, et. Al. 2002). Generally crabs are known to breed year round, but two main spawning periods exist namely, one from February to April and another from July to October (Angles and Braun 1989). After rapid growth of juveniles in shallow inshore habitats where molting occur, they move further offshore as they increase in size.

Juveniles of blue crabs increase in the month of April and decrease towards June (Germane and Melee 2003), corroborating the result of interview to fishers that they are harvesting these mall crabs along the bay in the same month. Berried females were found throughout the whole year but increases in the two spawning period. They attain sexual maturity in their first year of life. Mating generally occurs in brackish water from February to November with peaks in July to October.

After mating, females migrate to higher salinity water in the lower reaches of the estuary or in the ocean. Spawning occur in the near shore ocean water one to two months after mating in spring or summer. Factors controlling year-to-year variations of crab stocks exert their influence early in the life cycle. Water circulation pattern controlled by prevailing wind can either carry the larvae shoreward or sweep them away. Thus recruitment (addition of new individuals) of megalopolis and small crabs maybe largely controlled by the coastal water currents and the weather.

According to Whittaker (2000), small crabs survive best during years of relatively high fresh water runoff, which increases nutrients input and decreases salinity. In San Miguel Bay, there are plenty of rivers that drained into the bottom and shorelines for survival of these Juveniles of *Charladies*. Females produce up to two million eggs, but only one egg per million will survive to come an adult. A few crabs live for three years most live for less than a year (Whittaker 2000).

In the study conducted by 12 species of crabs in southeast India by Pillar and Nair (1973), *Charladies fermata* show a tendency to breed continuously with distinct periods of peak reproductive activity during the annual reproductive cycle, confirming the interview to fishers that these are harvested all year round with peak months of harvesting. With this scenario confronting *Charladies fermata* in the bay, study can be conducted anytime of the month since these species spawn year round and at the same time gig crabs are available for sampling thus, getting all sizes that will represent the population in the bay.

Related Studies This species occur sub-literally on muddy and sandy bottoms, as well as in rocky and stony coast and coral reef flats (Babble and Coral 2005). Sandy and muddy flats characterize almost 95% of the bay and almost 38 square kilometers are coral reef where this species inhabit. In Indian coast, *Charladies fermata* forms schools in inshore water and fished by commercial trawlers along with pended prawns (Earthshaking 2000). These are almost the same in San Miguel bay but before, these are sold to coal market as secondary catch.

In Raga gulf, fishing gears used in catching crabs are crab pot, gill net, set net and trawl. (Angles and Braun 1989). Crab fishers in Elite and Samara uses also four gear types namely, crab pot, lift net, gill net and trawl. Fishers in Sashimi Bay, Japan are using Dome-shaped pot with two open funnel entrances and the box- shaped pot with two entrances at the end using mackerel as bait (Vasquez and Sahara 2005). In San Miguel Bay as observed, crab fishers are also using crab pots in catching this species since this are marketed live for export. Female [pick] Male Figure