



## **Socio-economic Condition of Coastal People Involved in Kuchia Catching in South-Western Region of Bangladesh**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/AJAEES/2016/30786

#### Editor(s):

(1) Wang Guangjun, Pearl River Fisheries Research Institute, Chinese Academy of Fishery Sciences, China.

#### Reviewers:

- (1) Mamun-ur-Rashid, Patuakhali Science and Technology University, Bangladesh.  
(2) Gazi Md Nurul Islam, Tun Abdul Razak School of Government, Universiti Tun Abdul Razak, Malaysia.  
(3) Viviane Souza Martins, University of Campinas, Brazil.

Complete Peer review History: <http://www.sciencedomain.org/review-history/17700>

**Original Research Article**

**Received 30<sup>th</sup> November 2016**  
**Accepted 23<sup>rd</sup> January 2017**  
**Published 3<sup>rd</sup> February 2017**

### **ABSTRACT**

The study was carried out to create a better understanding about the socio-economic condition of coastal communities involved in kuchia catching. The study area was Paikgacha Upazila under Khulna district and its two large markets; Paikgacha kuchia market and Kopilmony kuchia market. From the study area, 56 kuchia catchers were selected randomly which was 12% of total fishermen community. Data were collected over twelve months from January to December, 2012 by interviewing kuchia catcher at Paikgacha. The socio-economic condition of kuchia catchers is very bad. The study showed that the highest percentage (50%) of kuchia catchers belong to the age group of 31-40 years. From the survey, it was found that 89.29% of kuchia catchers were Hindu, while only 10.71% were Muslim. The highest percentage (46.42%) of kuchia catchers were found to be educated at the level of class one to two. It was observed that the highest percentage (42.86%)

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of the catchers had 6-7 members in their family. Highest number of Kuchia catchers (89.29%) were found to be dependent on village doctors. The study showed that the highest percentage (42.86%) of Kuchia catchers earned Tk. 30-60/day by selling their collected kuchias.

*Keywords: Socio-economic; kuchia catchers; Paikgacha; Khulna.*

## 1. INTRODUCTION

*Monopterus kuchia* (Hamilton, 1822) is generally known as kuchia or swamp eel (Synbranchidae: Synbranchiformes), is a fish species with good taste and high market value. The food value of this fish is very high. The average protein content per 100 g of kuchia flesh is 14 g and the caloric value of kuchia flesh is as high as 303 Kcal/100 g compared to 110 Kcal/100 g in other average fishes [1]. Kuchia lives in both freshwater and brackishwater. In Bangladesh, kuchia (*M. kuchia*) is an export earning commodity that is playing an important role in national and international markets. Kuchia has great demand in international market which is contributing to earn foreign currencies [2]. It can generate employment directly and indirectly in terms of people employed in the production, marketing and other associated businesses. Kuchia is not cultured in our country. It is collected from natural sources such as: shrimp gher<sup>1</sup>, ponds, derelict ponds, beels, canals, rivers holes etc. Kuchia remain in these water bodies making hole in the mud. Generally, poor people are involved in catching kuchia because, for this, they need no money and they catch kuchia from natural source for their income. The most marginalized segment of coastal population especially land less people, widow, orphan and children earn their livelihoods for several months by collecting kuchia from the wild and selling these to the paikers (bepari). Therefore, it is becoming vulnerable in Bangladesh due to loss of habitats, changes in habitats and overexploitation [3]. The natural stock of kuchia is decreasing day by day due to over exploitation. Other causes for the reduction of kuchia population is habitat destruction through blockage of water flow, shallow water depth, encroachment by agriculture and aquaculture, indiscriminate use of chemicals like fertilizers and pesticides, development of flood control structures and fishing in breeding season [4]. We need regulations on kuchia catch from the natural habitat. If we can artificially breed

and culture them, we will be able to protect them. If we culture and export it, we will earn a lot of foreign currency. For this, we have to improve the existing export marketing system of kuchia also. By exporting kuchia Bangladesh earned 14.49 US\$ in the FY 2012-13 [5].

Fishermen are one of the most vulnerable communities in Bangladesh. Their per capital annual income is BDT 2,442 i.e. about 70% lower than per capital income of the country as a whole [6]. The scenario is similar for the kuchia catchers. A socio-economic study will help to identify the constraints and threats of their livelihood and to formulate alleviating measures for improvement of their live and living as a whole. It will also help to take measures to prevent over exploitation of kuchia. The aim of this article is to describe the socio-economic condition of coastal people involved in kuchia catching in south-western region of Bangladesh.

## 2. MATERIALS AND METHODS

A preliminary survey was conducted at kuchia markets in different upazilas such as: Shamnagar, Kaliganj, Paikgacha, Koiria, Kachua, Fokirhat etc. of south-western region of Bangladesh. Finally decision was taken for the study at Paikgacha upazila in Khulna district. The study area covers a large water bodies producing a huge amount of different types of fisheries organism, mainly shrimp. The site of the study is in coastal region. A huge amount of kuchia is found in shrimp gher of this area and catchers catch them from those gher. Kuchia from different upazilas of Khulna and Satkhira districts come to the kuchia markets of the study area. Kuchia catchers are those persons who catch kuchia and sell them for earning money. Data were collected during the period from January to December, 2012. Existing marketing data were collected twice in a month to fulfill the requirement of the research objective.

### 2.1 Data Collection Method

Data were collected by direct visiting and interviewing. The basic methods for data

<sup>1</sup>Gher: Gher is a raised embankment structure with internal ditch or pond area in which water is held for shrimp or fish culture.

collection were survey, interview and cross-check interview. A total number of 56 kuchia catchers were selected randomly which was 12% of total fishermen community and were interviewed throughout the period of study. Cross-check interviews were conducted with key informants such as Senior Upazila Fisheries Officers, Chief Scientific Officer of Brackish water Station of Bangladesh Fisheries Research Institute, school teachers, local leaders, service holders both private and government and relevant GO & NGO officers and staffs throughout the period of study. The accuracy of the data obviously depends on the answers of the interviewees.

### 2.2 Data Processing and Analysis

At each stage of the survey, data were checked, edited and coded in the field. Data from various sources were coded and entered into a database system using Microsoft Excel software. All the data were statistically analyzed by Microsoft Excel and SPSS (Statistical Package For Social Science) software.

## 3. RESULTS

Socio-economic status of kuchia catchers was completed by collecting data on age structure, religious status, educational status, sex ratio, family size, drinking water facilities, sanitation facilities, use of electricity, housing condition, health care facilities, daily income etc. from the kuchia catchers which are presented below.

### 3.1 Age Structure

At Paikgacha upazila under Khulna district, highest percentage kuchia catchers (50%) were in the age group of 31-40 years, whereas 3.57%, 7.14%, 17.86%, 14.29% and 7.14% of the collectors belonged to age groups 16-20, 21-25, 26-30, 41-45 and above 45 respectively (Fig. 1).

### 3.2 Religious Status

In case of religious affiliation; mostly Hindus are involved in this occupation. From the survey it was found that 89.29% of kuchia catchers were Hindu, while only 10.71% were Muslim (Fig. 2). Religious restriction on eating kuchia might also discourage the Muslims to be involved in catching kuchia.

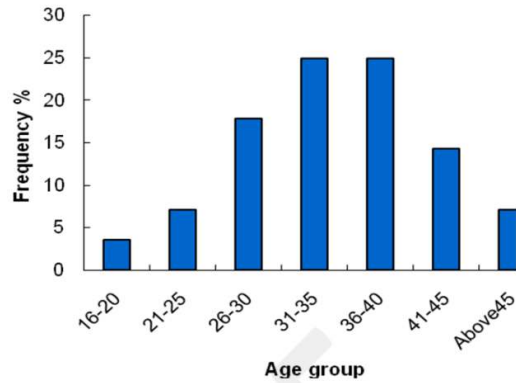


Fig. 1. Age structure of the kuchia catchers at Paikgacha

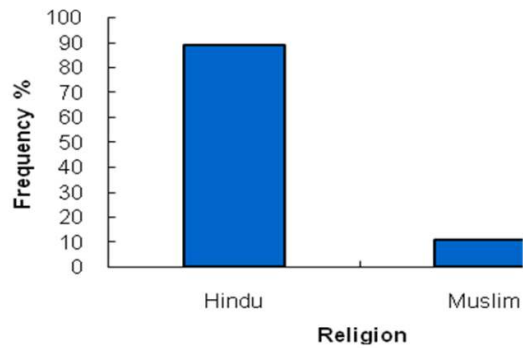


Fig. 2. Religious status of the kuchia catchers at Paikgacha.

### 3.3 Educational Status

Generally, the kuchia catchers comprised of the most marginal segment of the coastal population. They had little or no education, 46.42% were found to be educated at the level of class one to two, 14.29% at the level of class five, 3.57% at the level of class nine, whereas the rest were completely illiterate (Fig. 3).

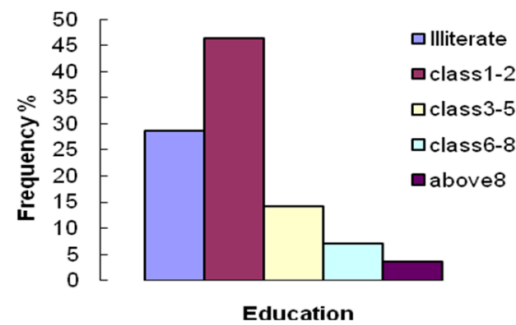


Fig. 3. Educational status of the kuchia catchers at Paikgacha

### 3.4 Sex Ratio

Among the respondents, 57.14% of the total kuchia catchers were male and the rest (42.86%) were female (Fig. 4). Most of the kuchia are collected from gher in this area. Therefore, females were involved in collecting kuchia in the study area.

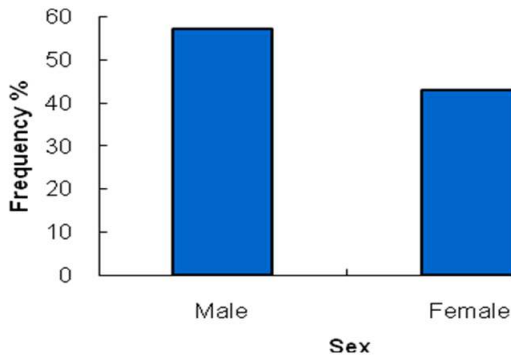


Fig. 4. Sex ratio of the kuchia catchers Paikgacha

### 3.5 Family Size

At Paikgacha, it was observed that 42.86% of the catchers had 6-7 members in their family, whereas 28.57%, 17.85% and 10.71% of them had 4-5, above 7 and 2-3 members in their family, respectively (Fig. 5).

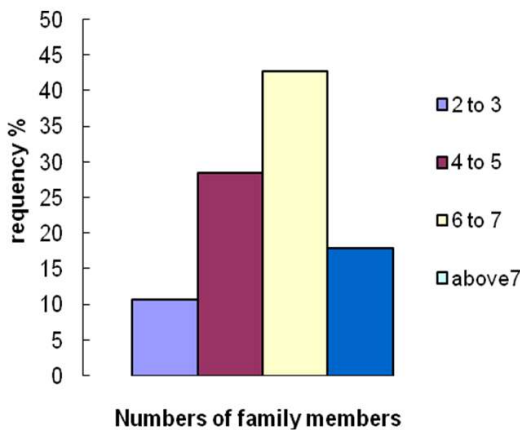


Fig. 5. Family size of the Kuchia catchers at Paikgacha

### 3.6 Drinking Water Facilities

57.14% of the kuchia catchers used tube-well water for drinking purpose whereas none of them

had their own tube-well. However, they use tube-well provided by the local government or those belonging to schools or neighbors, 35.71% use pond water and 7.15% use rain water or other source of water.

### 3.7 Sanitation Facilities

Two types of toilet such as (i) Katcha toilet-made of bamboo with leaf shelter and inadequate drainage system and (ii) Sanitary toilet- made of bamboo walled, ring slave with good drainage system were found to be used by the kuchia catchers. 57.14% had sanitary toilet and 42.46% had katcha toilet (Fig. 6).

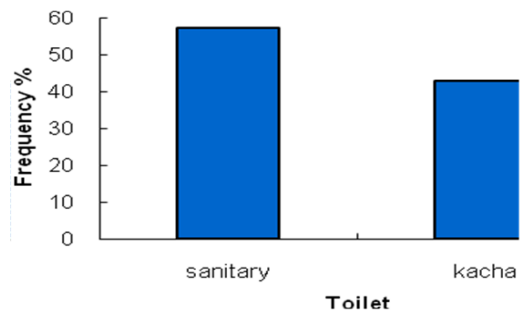


Fig. 6. Sanitation facilities of the kuchia catchers at Paikgacha

### 3.8 Use of Electricity

Only 21.43% of the kuchia catchers at Paikgacha in Khulna district had electricity facility.

### 3.9 Housing Condition

The kuchia catchers were found to live in three types of houses viz. i) Wooden wall with tin shed (3.57%), ii) Mud wall with tin/asbestos shed (10.71%), iii) Mud wall with golpata or straw shed (85.72%).

### 3.10 Health Care Facilities

Highest percentage of kuchia catchers (89.29%) were found to be dependent on village doctors (unqualified practitioners, homeopathy, kabiraj<sup>2</sup> etc.) for their treatment, while only 10.71% got health services from qualified doctors from local government health centre.

<sup>2</sup> Kabiraj: A physician who follows the Ayurvedic system of treatment.

### 3.11 Daily Income

Kuchia catchers catch kuchia mainly from shrimp ghers. They also catch kuchia from ponds, derelict ponds, beels, canals, rivers holes etc. They catch kuchia by hand or rod and hook (locally called Borshi). Catching kuchia was the main source income of the kuchia catchers of the study area. Few catchers were also involved catching crab and other income generating activities. Economic status of kuchia catcher is not good. Almost all of them live below poverty line. Most of them have little or no land. Kuchia catchers having no own land, live in khas land. At Paikgacha most of the Kuchia catchers (42.86%) earned Tk. 30-60/day by selling their collected Kuchias, whereas 28.57%, 17.86%, 7.14% and 3.57% of them earned Tk. 61-90, 91-120, 121-150 and more than 150/day, respectively. As it is a seasonal business, eventually the income is also seasonal. In off-peak season kuchia catching become very low; as a result income also becomes low.

### 4. DISCUSSION

The present study focused on socio-economic conditions of coastal communities involved in Kuchia catching. The socio-economic status kuchia catchers are not well. They live below poverty line. In the present study, most of the kuchia catchers (50%) were in the age group of 31-40 years, which is similar to the findings of [7] who stated that, most of the crab collectors (35%) were in the age group of 33-41 years in Khulna district. Rahman [8] found that 57.9% of crab fatteners belong to the age range of 38-46 years in Khulna region. In the present study, 89.29% kuchia catchers were Hindu. This agrees with the findings of [9] who reported that the majority of the fishermen in different parts of the country are Hindus. The educational status of kuchia catchers of the study area is very low. Highest percentage (46.42%) were found to be educated at the level of class one to two, which is similar to the findings of [2] who found 48% of kuchia catchers at Purbadhala upazila under Netrokona district were educated up to primary school. The Government and the leading NGOs should take this matter into account so that a proper strategy can be made. Unfortunately, the non-formal education facilities provided by different NGOs in other parts of the country were hardly found in these communities. Most of the kuchia are collected from ghers in the study area. Therefore, females (42.86%) were involved in catching kuchia in the study area. Most of the kuchia catchers (42.86%) had 6-7 members in

their family, whereas [2] found 47.5% of the kuchia catchers had 4 to 5 members in their family at Purbadhala upazila under Netrokona district and [10] found that 48% crab fatteners had 4-5 family members in Shaymnagar upazila of Satkhira district which is not similar to the present study. Only 21.43% kuchia catchers use electricity which is similar to the findings of [7] that only 18% of the crab collectors in Khulna and Satkhira district had electricity facility. In the present study, most of the Kuchia catchers (89.29%) were found to be dependent on village doctors (unqualified practitioners, homeopathy, kabiraj, etc.) for their health care, which is similar to the findings of [7] who stated that, most of the crab collectors (90%) were found to be dependent on village doctor for their treatment in Khulna region.

### 5. CONCLUSION

From the survey it is found that, mostly poor people are involved in kuchia catching in the study area. This poverty is the reason of their lower education level which in turn affects the family size because they think that higher family member will result in higher income level. The Government and the leading NGOs should take this matter into account to improve their socio-economic conditions and to encourage the kuchia catchers to involve in other source of income besides kuchia catching because if they catch kuchia indiscriminately it will be endangered in near future. As kuchia has great demand in international market, we should artificially breed and culture them. Therefore, we will be able to protect kuchia from extinction as well as earn a lot of foreign currency.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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