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Swagat Ghosh

Sasya Shyamala Krishi Vigyan
Kendra Indian Council of
Agricultural Research (ICAR)
School of Agriculture and Rural
Development Ramakrishna
Mission Vivekananda University,
Kolkata-700150, (WB), India

NC Sahu

Sasya Shyamala Krishi Vigyan
Kendra Indian Council of
Agricultural Research (ICAR)
School of Agriculture and Rural
Development Ramakrishna
Mission Vivekananda University,
Kolkata-700150, (WB), India

Correspondence

Swagat Ghosh

Sasya Shyamala Krishi Vigyan
Kendra Indian Council of
Agricultural Research (ICAR)
School of Agriculture and Rural
Development Ramakrishna
Mission Vivekananda University,
Kolkata-700150, (WB), India

Alternative sustainable livelihood opportunities for rural youth men and women empowerment through mud crab farming at Indian Sunderban

Swagat Ghosh and NC Sahu

Abstract

The study was conducted to assess the alternative livelihood conditions through mud crab (*Scylla serrata*) farming in vast area in Basanti and Gosaba districts in different areas in Sunderban by using semi-structured and pre-tested interview schedule in order to assess the alternative livelihood for rural youth men and women empowerment in mud crab farming. The present study revealed that rural youth men and women were played an integral role in mud crab farming in Sunderban of West Bengal. The entire family members of the crab farmers were involved in different activities like feeding, stocking, and other pre stocking and post stocking management in crab farming. Annual income of the crab collectors was less than USD. 2100-2300 where the lowest annual income of the crab fatteners was USD. 2300-2800. Natural disasters and other constraints were also affected the agricultural livelihood of sunderban farmers including crab farming. So, the present study of crab collection and fattening are alternative livelihood and sustainable farming for them in a sustainable practice.

Keywords: *Scylla serrata*, mud crab, fattening, livelihood, empowerment, sunderban

1. Introduction

Mudcrab farming in Sunderban is a usual tradition for sunderban which is acting a foremost function in livelihood of the coastal communities. It was gave a breakthrough for a sustainable alternative livelihood and rural youth men and women empowerment after the cyclone in sunderban which was locally called as 'Aila'. The effect of Aila cyclone is maximum paddy cultivated areas including freshwater ponds became saline areas due to the effect of high saline water flood. The giant mud crab *Scylla serrata* is among the most popular targeted crustaceans in with an estimated total annual catch exceeding 3.0 million individuals; most (95%) of which are trapped^[1].

Rural youth men and women have better residing control with the ability to endeavour long hours of work and also have the patience to protect resources for future. The gender likeness of this sector is slowly shifting towards not only sustainable production but also gender equality. The gender in mud crab farming is also undergoing significant transformation. Rural youth men and women are involved in planning, decision making process and work hand in hand in managing and controlling resources. Availability of institutional finance helps them to perform mud crab farming which can be operated by group of rural youth men and women. They are involved in all activities of fisheries in all continents although the degree and type of participation is quite variable depending on the local cultural conditions².

All rural youth men and women found to engage in feed application to their farmed crabs which is less laborious works in past. While now a days they also involved in grading, packaging and marketing of crabs was significant. From the survey, it also revealed that more educated and experienced mud crab fattening farmers found to have more benefit, that is in line with others finding established the positive impact of literacy over farm efficiency. The study suggested that crab fattening could provide a better opportunity to them that ultimately could bring change in their decision making empowerment and livelihood development³. The present study mainly focused on their livelihood documentation and its sustainability through crab farming.

2. Materials and Methods

2.1 Study location

The experiment was done in the inhabit at Island of Sunderban delta region of India (21.95° N, 89.18° E). Two areas within the inhabit at Island of Sunderban delta region of

India were selected for the research (Figure 1). The first area was chosen to ensure sufficient numbers of adult *S. serrata* farming (Figure 2). The second area was selected for more juveniles and subadults farming (Figure 3).

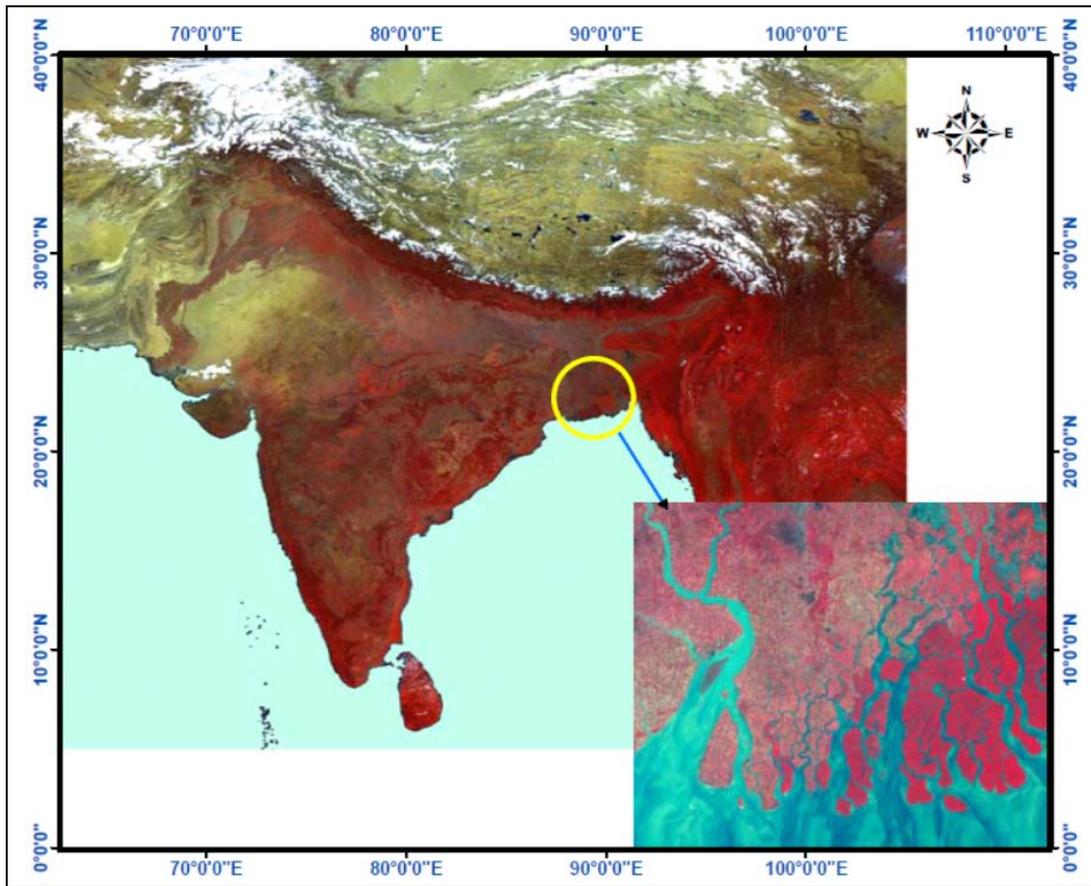


Fig 1: Geographical view of Sunderban in India (Surfer, 8.0).



Fig 2: Mud crab Production at Indian Sunderban from the rural youth men and women

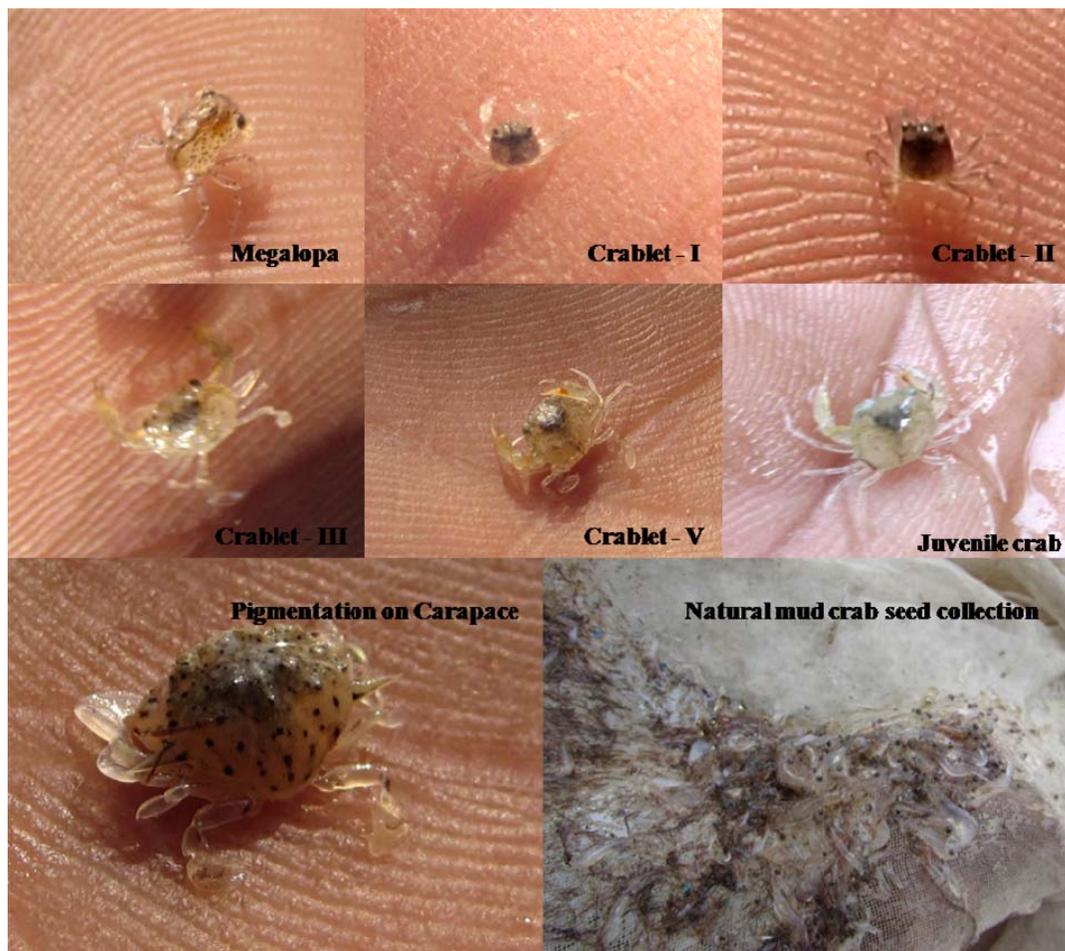


Fig 3: Mud crab natural seed and its different stages which is used for the crab farming in Indian sunderban

3. Methodology

Through mud crab collection, fattening and farming more than 25000 people are directly benefited and nearly 40000 people is related indirectly with this cultivation. From January 2014 to December 2014, 100 crab collectors and 100 crab fattening farmers were considered where 40% of the crab collectors collected crabs from the Sundarban and fattening of mud crabs were generally done in Polythene sheet wrapped pond, bamboo cages and in net wrapped ponds. In the study area, 40% and 55% crab collectors and fatteners respectively were from the age group of 20-40 years. There were 40% of the crab fatteners had own land, but 38% of the crab collectors had very less economy due to lack of marketing strategies.

Survey research gathers data from a relatively large number of cases at a particular time. It has the advantage of wider scope and accuracy of information in studying the managerial behavior, social activities, behavior, attitude and trends [2]. The mud crab farm is situated in Uttar Sonakhali, Mokamberia, Harbhanga, Itavati, Kumirmari, Satjellia, Gosaba, Uttarchandanpiri, Lahiripur, Namkhana, Nischintapur & Choto Mollakhali in Sundarban area were the selected areas of focus for study and management by rural youth men and women. Purposive sampling was adopted as a method of sampling, considering the nature and scope of study, availability of samples and time limitation. The discretion of the investigator formed the major basis for the selection of the samples. Direct personal interview and Interview schedule pertaining to the study was developed

calling information on the aspects such as socio-economic profile, employment status, goals in life, decision making practices, level of satisfaction and attitude and development of models [3, 4, 5].

4. Results and Discussions

The results and discussion on the study of crab farming for rural youth is highlighted under the following points.

4.1 Socio-economic profile of the respondents

The Socio-economic profile of the respondents is discussed under the family characteristics, age, marital status, language, housing, education, experience and income.

4.2 Family Characteristics

The contemporary development of adapting to the nuclear families among thirty per cent of the respondents family shows that it is slowly gaining attention due to education and mobility for employment. Moreover, their connections with outside world would have assisted them to change their attitudes towards adoption of nuclear families for better standard of life. But, seventy per cent of the respondent's families belonged to Joint family pattern. The tendency highlights that they still follow their tradition of living together as a joint family sharing the income and having a common hearth, their life style centring on community life. Sixty five per cent of the respondents' families had 6-9 members and the rest 35 per cent were of small family with the present concept of having just 3 members in the family.

4.3 Education

Primary school level education was rampant among the respondents (85%). Only thirty five per cent of the respondents on an average had secondary school education. With the primary school level education among the Rural youth men and women farmer, it was surprising to note that they were able to handle all the mud crab farming with this level of education effectively without any difficulty. Majority of the respondents were unmarried (90%) and very few were married (10%).

4.4 Employment Status

The employment status of the respondents is discussed under the performance in mud crab farming, motivating factors, facilitating factors, problems encountered, physical and psychological fatigue, decision making practices, attitude and satisfaction.

4.5 Work Experience

Majority of the respondents expressed that eighty per cent had a work experience in mud crab farming for five to six years, followed by fifteen per cent with one or two years of experience and five per cent with eight and above years of experience.

4.6 Performance in mud crab farming

All the respondents were involved in all the following mud crab farming like 'Brood stock maintenance', Induced maturation, Feed preparation, Spawning, Larval rearing, Post larval production, Harvesting & Packing, Management of water supply system, Water Quality monitoring, Management of Air supply system, Live feed culture & Management, Seed packing and Post larval rearing. All the above crab farming was performed every day in turn basis. If one technician finishes work that rural youth undertakes the next operation. Thereby all technicians get a chance of working in all areas of hatchery operations.

4.7 Motivating Factors Related to Employment

In general, forty five per cent of the respondents were motivated by the factors such as 'Economic necessity', followed by the factor 'Economic Independence' (30%) and 'Occupy the time usefully' and 'Raise the standard of living' (20%). It was astonishing to note that for a minority of five per cent 'Dislike to continue the further study after completion of their primary or secondary schooling'. It was also a major reason for taking up jobs.

4.8 Decision Making Practices

The decision making practices prevailing among the respondents were analyzed. The activities to which 'Rural youth men and women', 'Men alone' and 'Both' are mainly responsible for decision making was analyzed. It was observed that the Rural youth men and women manager expressed that the factors such as 'Plan of work for the day' and 'Managing the Technicians' were planned exclusively by the Rural youth men and women and the activities like 'Purchase of materials required for crab farming', 'Keeping accounts', and 'Buying new equipments' was decided by the 'Men alone' i.e., The Proprietor. The remaining activities like 'Expenditure of income' and 'Maintaining accounts' were jointly decided by rural youth men and women. It was observed that the rural youth men and women manager played a major role in the decision making related to both hatchery and farm activities.

4.9 Income Generation

Rural youth men and women crab farmers were engaged on daily wages. The wages are decided between manager and the workers of the society. Regular Rural youth men and women employees reportedly earn a rise in their salary @ USD. 600 per month. Annual income of the crab collectors was less than USD. 2100-2300 where the lowest annual income of the crab fatteners was USD. 2300-2800.

4.10 Loan System

Crab collectors in most of the cases did not get actual price of their products due to intervention of brokers and loan burden. The crab collectors were bound to sell the crabs at a low price to the specified brokers or wholesalers who provided them loan in their lean period. Likewise, wholesalers were to sell their products to certain distributors who gave them loan in their business.

5. Conclusion

Crab farming and fattening can progress the rural youth men and women's empowerment and alter the livelihood option within household and can provide a better opportunity to them that ultimately could bring change in their decision making empowerment. The present study suggested different training and extension services or working in a groups would be enhanced the skill and knowledge of the rural youth men and women who involved in aquaculture like crab farming in Deltaic Sundarban situation. This team has been working on gender studies and evaluating the socio-economics of low intensity aquaculture on employment income and sustainability in addition to the case which has been studies in this work. Rural youth men and women participation in aquaculture in all its segments is more of its reality in the current day context than a decade back. It can be safely observed that sustainability in aquaculture bears a direct and positive relationship with rural youth men and women participant in this enterprise.

6. Acknowledgement

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7. References

1. Butcher PA, Leland JC, Broadhurst MK, Paterson BD, Mayer DG. Giant mud crab (*Scylla serrata*): relative efficiencies of common baited traps and impacts on discards. ICES J Mar Sci. 2012; 69:1511-1522.
2. FAO ADCP/REP/87/28-Women in Aquaculture. Proceedings of the ADCP/NORAD Workshop on Women in Aquaculture Rome, 1987.
3. Hay T, Gribble N, de Vries C, Danaher K, Dunning M. Methods for monitoring the abundance and habitat of the northern Australian mud crab *Scylla serrata*. Fishery Report No. 80. Northern Territory Department of Business, Industry and Resource Development, Darwin, 2005.
4. Holst R, Revill A. A simple statistical method for catch comparison studies. Fish Res 2009; 95:254-259.
5. Miller RJ. Entry of Cancer productus to baited traps. J Cons Int Explor Mer. 1979; 38:220-225.