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Seaweed Aquaculture: An Alternative Income Generation Option to Improve the Livelihood of the Southeast Coastal Communities of Bangladesh

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Abstract

Coastal communities are blessed with abundance of natural resources nevertheless, they remain poor especially in developing countries. The livelihoods of the inhabitants of coastal areas are deficient in proper economic growth. To improve sustainable ways of earning from various income sources using their existing resources, approaches to develop alternative livelihood is a common practice. Coastal communities of Bangladesh occupied on southeastern coasts, known to have a significant number of commercially valuable seaweeds grown seasonally. The communities here are aware of the value yet have no idea how to use it. The current study elucidated the response of coastal inhabitants' on potentiality of seaweed farming as an alternate income generation (AIG) activity to improve the livelihood of the coastal community in Bangladesh.

Keywords: Seaweed; Alternative income generation (AIG); Bangladesh; Coastal community

Introduction

Bangladesh possesses one of the largest coasts in South Asia including Cox's Bazar beach, Teknaf and St. Martin's Island. The livelihoods of the inhabitants of these areas are based primarily on the coastal resources. Coastal aquaculture predominantly oriented by freshwater prawn and salt water shrimp farming [1]. Nevertheless, the community is underprivileged compared to the other part of the country in education, employment and medical sectors advances [2]. Proper economic progression of the community hampered due to increased population, competition on insufficient employment, and alternative earnings opportunity only from tourism season. The problem often confounded with natural hazards affected the community with nearly no definite source of regular income. Developing alternative livelihood commonly used as an effective strategy to ensure sustainable development and economic boost of the coastal communities globally [3].

Rich biodiversity on the coasts of Bangladesh previously reported with seaweed flora along with a variety of fauna grown from December to May every year [4-6]. So far, 95 red, 47 greens and 60 brown macro- and micro-algal species recorded from this area [7]. These seaweeds are valued greatly for their diverse applications worldwide. The whole plant body used as food, fodder, and fertilizer or as a source of commercially significant hydrocolloids, such as, agar, alginate and carrageenan used in processing of food, pharmaceutical and cosmetics industries [8,9]. Seaweed aquaculture already substantiated economically viable and commercially sustainable way to improve the livelihood of the coastal communities in several countries of Asia and Africa, like, Philippines, Indonesia, India and Tanzania [10,11]. Although, the coastal communities in Bangladesh knows the value of seaweed, they lack understanding of how to harness it. Our findings recommended local communities in this area are well aware of potential use of seaweeds and are willing to involve seaweed farming if this would turned into a practical income generating activity in future.

Methods

Study area encompassed Cox's Bazar, Teknaf and St. Martin's Island at the southeast coast of Bangladesh. Sampling method was snowballing or chain referral sampling [12]. Hundred native inhabitant participants had been made randomly via the researchers on study sites who could potentially participate in the questioners or contribute to the study.

Results and Discussion

Of hundred respondents, over fifty percent were familiar with various usage of seaweeds and agreed it could possibly be a good option of alternative income source for them (Figure 1). Seventy percent of them acknowledged seaweeds can be a

potential income source along with their regular earnings; however, most of them (47%) were doubtful on seaweed farming perhaps establishes future industries in Bangladesh. Conceivably, as there is no seaweed farm developed here yet, the local community had no clear idea about the labor or prospective benefit from the farm.

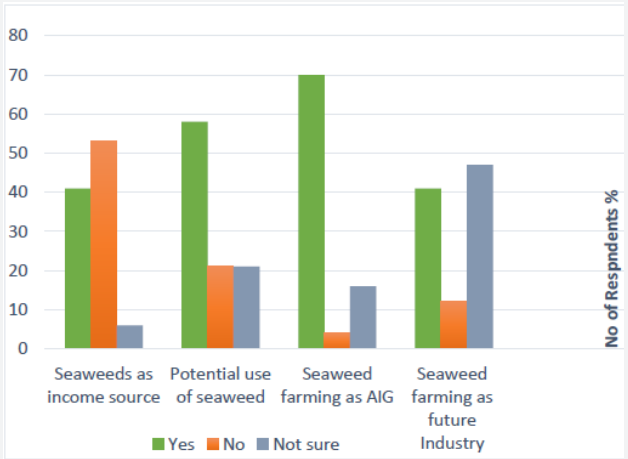

Figure 1: Bar graph shows responses of participants including all three sites on four categories of questions on seaweed farming. Each question category inquired whether there is a possibility or they are aware of the situation.

Conclusion

Seaweed farming could contribute to the coastal aquaculture sector, create new occupations and improve poverty circumstances, to develop coastal livelihoods in Bangladesh. The prospective of the farm can be experienced through a pilot venture with the help of the local community. The challenges and success of this venture would help to establish commercially valued sustainable income generation activity from seaweed farming in future.

Conflict of Interest

Authors declared no conflict of interest for this research.

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