Research Application Summary

The impact of climate change on mud crab fishery and fattening to the communities livelihood in Pangani and Rufiji estuaries in Tanzania

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Abstract

The mud crab *(Scylla serrata)* is a big portunid crab that lives on soft muddy bottoms association with mangrove-lined estuaries in the Indo-West Pacific. They have fast growth rates, early maturity, wide distribution and high fecundity. Mangrove associated fauna would be affected directly by change in climatic condition variables. This study, just initiated, is assessing the contribution of mud crab fattening and fishery to the communities' livelihoods. Findings will help to establish whether mud crab farming is a plausible adaptation strategy for mitigating impact of climate change to coastal communities in Tanzania.

Key words: Estuaries, fattening, fishery, livelihoods, Mud crab, Pangani, Rufiji, Tanzania

Résumé

Le crabe de palétuviers *(Scylla serrata)* est un grand crabe de la famille des *Portunidae* qui vit sur une molle association des fonds boueux aux estuaires bordés de mangroves dans le Pacifique Indo-Ouest. Ils ont des taux de croissance rapide, une maturité précoce, une large distribution et une fécondité élevée. La faune associée à la mangrove serait directement affectée par les changements dans les variables de condition climatique. Cette étude, juste initiée, évalue la contribution de l'engraissement des crabes de palétuvier et celle de la pêche aux moyens de subsistance des communautés. Les résultats permettront de conclure si l'élevage des crabes de palétuvier est une stratégie d'adaptation plausible pour atténuer l'impact du changement climatique pour les communautés côtières de la Tanzanie.

Mots clés: Engraissement, pêche, moyens de subsistance, crabe de palétuviers, Pangani, Rufiji, estuaires, Tanzanie

Background

Young or juvenile crabs are harvested from the wild and then fattened in cages to market size, and sold to consumers. The industry has however, not been well studied in Tanzania, where crab farming is commonly practiced by coastal communities.

For example, it is not clearly known how mud crab fattening and fishery contributes to the communities' livelihood.. Few studies have also been conducted on climate change in relation to marine ecosystem and it resources and the adaptation strategy. This study will assess the contribution of mud crab fattening and fishery to the communities' livelihoods and suggest whether mud crab farming is the best option adaptation strategy for impact of climate change to coastal communities.

Literature Summary

The culture of mud crab has received more attention because of its market demand and decrease in production from the wild caused by climate change (Hiddink *et al.,* 2008). A well managed mud crab fattening and fishery could generate as much revenue as the entire prawn fishery presently operating in the Rufiji delta (Anon, 1981). Crab fattening and fishery have been reported to be affected by number of constraints (Zannatuel *et al.,* 2009). In Tanzania two species of crabs namely *Scylla serrata* and *Portunus pelagicus* are large enough to have fishery potential (Chande *et al.,* 2003).

Study Description

The study will be conducted at Pangani and Rufiji districts in Tanzania for two years using structured questionnaire interviews. Analytical tool to be used are simple descriptive statistics and cost-return analysis. Data analysis will be conducted using Statistical Package for Social Sciences (SPSS) computer programme.

Research Application

The findings will help to give an insight on economic benefit of mud crab farming to the coastal communities and to suggest whether mud crab farming is best option adaptation strategy for impact of climate change to coastal communities.

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