

Effectiveness of Blood Cockle *Refugia* in Community Fisheries Prey Nub 2, Sihanoukville, Cambodia

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Abstract

Blood cockle is one of the major marine products in the community but the resource is encountering the risk of stocks degradation mainly due to destruction of the fisheries habitats from rampant illegal fishing by dredgers and over-exploitation. Considering this as a very critical issue, the Fisheries Administration of Cambodia and Community Fisheries Prey Nub 2 in collaboration with SEAFDEC agreed and established the Blood Cockle Refugia. Since the project supported by SEAFDEC ended in 2009, a research was conducted in 2014 to evaluate the effectiveness of the blood cockle *refugia*. The specific objectives of the study were to evaluate the current status of the *refugia* management and improve the blood cockle resources in the Community Fisheries. The study used quantitative approach to collect data including key informant interviews with key stakeholders such as fishers, fisheries officers and commune councils, focus group discussion and field observation. Documents from the Integrated Coastal Resources Management Project: Sihanoukville, were reviewed. The report findings indicated that blood cockle refugia is still working under the guidance of the Provincial Fisheries Administration which modified the management approach. The regulation established on blood cockle size to be harvested was no longer enforced because local fishers complained about its negative impact on their daily catch. Other concerns of the Provincial Fisheries Administration included the relatively big proposed site for *refugia* which was difficult to manage; members of the Community Fisheries seemed not to be actively participating in the management scheme although the concerned local fisheries officers were working hard to implement the said scheme. Nevertheless, the daily catch of blood cockle was significantly stable indicating the effectiveness of the *refugia*. In general, the blood cockle *refugia* in Community Fisheries Prey Nub 2 brought a significant impact not only on blood cockle harvest but also on the habitats that this species rely on such as mangroves and sea grass beds that had been well protected. Anyhow, the management approaches of the *refugia* should be revised to reflect the socio-economic and environmental conditions of the local people in the area. Few suggested recommendations should be taken into account, such as (1) the restriction on size of blood cockle to be harvested should be modified, (2) the coverage area should be reduced, (3) the current Blood Cockle Team of the Community Fisheries should be restructured, and (4) a scientific research on blood cockle biology should be conducted using the baseline data from ICRM-SHV supported by SEAFDEC.

Keywords: blood cockle *refugia*, *refugia* management, effectiveness, community fisheries

Introduction

Blood cockle is one of the major marine products in Community Fisheries Prey Nub 2 in Sihanoukville, Cambodia but the resource has been observed to be at risk of degradation mainly due to destruction of the fisheries habitats from rampant illegal fishing by dredgers and over-exploitation. Considering this as a very critical issue, and in order to improve the situation, SEAFDEC together with the Fisheries Administration of Cambodia and the Community Fisheries Prey Nub 2, agreed and established the Blood Cockle *Refugia*.

After the project supported by SEAFDEC was completed in 2009, a review was conducted in 2014 to evaluate the effectiveness of the blood cockle *refugia*. The specific objectives of the study were to evaluate the current status of the *refugia* management and promote the improvement of blood cockle resources in the Community Fisheries. Data for the review were collected through key informant interviews with key stakeholders such as fishers, fisheries officers and commune councils, focus group discussions, and field observations.



(left to right): collecting blood cockle by hand; sorting harvested blood cockle; illegal engine-operated dragger used to harvest blood cockle

Results of Review

Findings from the review indicated that the blood cockle *refugia* is still working under the guidance of the Provincial Fisheries Administration with modifications of the management approach. Specifically, the specific regulation on size of blood cockle to be harvested which was adopted by the Blood Cockle Team during the Integrated Coastal Resource Management–Shihanoukville (ICRM-SHV) supported by SEAFDEC, was no longer enforced as the local fishers complained about the negative impact of such regulation on their daily catch. Moreover, the proposed site for the *refugia* was found to be relatively big and difficult to manage with some members of the Community Fisheries not actively participating in the management of the *refugia*. For such reasons, management of the *refugia* was placed under the Provincial Fisheries Administration with local fisheries officers taking up the responsibility of implementing the activity. Since then, the daily catch of blood cockle has been significantly stable indicating the effectiveness of the *refugia*.

Conclusion and Recommendations

In general, the management approaches of the blood cockle *refugia* should also be revised to reflect the socio-economic status of the local people and the environmental conditions in the *refugia* area. Few recommendations should be taken into account for the sustainability of the *refugia*. These could include modification of the regulation on the size of blood cockle to be harvested, reduction of the coverage area to facilitate effective management, restructuring of the current blood cockle team of the Community Fisheries, and conduct of a scientific research on

In addition, the fisheries officers at commune level have also been assigned to work closely with the Community Fisheries Prey Nub 2, especially in patrolling the *refugia* area, although those officers do not stay permanently in the area. As a result, illegal collection of blood cockle still persists. In general, the blood cockle *refugia* in Community Fisheries Prey Nub 2 brought a significant impact not only on the blood cockle harvest but also on the habitats that this species rely on such as mangroves and sea grass beds that had been well protected.

It should be noted that the Blood Cockle Team under the ICRM-SHV Project had developed two types of sieves for sorting and filtering the harvested blood cockles: one for filtering 10 g blood cockle and the other for 20 g. There is a need to review use of such sieves from the socio-economic point of view, and if necessary, the regulation on the size of blood cockle to be harvested should be revised accordingly.

blood cockle biology using the baseline data compiled from the ICRM-SHV Project. Furthermore, it should be considered that fish *refugia* could be effectively managed if illegal fishing activities especially by outsiders are eliminated. Activation of patrol work is important to help reduce illegal fishing in the *refugia* area. Community Fisheries should maintain close collaboration with the Fisheries Administration in combating illegal fishing activities, especially in enforcing the relevant laws and regulations.