



# Tropical Artisan Shrimp Knowledge Network

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## ABOUT THE STUDY

Local ecological knowledge (LEK) in the fishing community is generated through the interaction of fishermen with exploited stocks. It is transmitted via social networks, an interdisciplinary structure that drives the dynamics of the Social Ecological System (SES). LEK variability is said to depend on the quality and quantity of the flow of ecological information among various stakeholders. To assess the factors that cause LEK problems, it was assumed that the formation of LEK clusters among fishermen was caused by network clarification, fisherman experience, and the commercial value of the exploited species.

The interaction between fishermen and stocks produces individual ecological knowledge that is redistributed throughout the community depending on the system of relationships. Redistribution affects social functions, and individual characteristics determine the quality and quantity of social knowledge, thereby affecting the structure of social groups. Some individual characteristics are known to affect the ecological knowledge (LEK) of the region, including gender, demographics or formal education beyond the individual level, social organizations have a strong influence on local knowledge. This is the basis for efficient use of unsafe natural systems. Therefore, the community's regional ecological knowledge profile is expected to be related to the quality and quantity of information on the bioecological aspects of the stock of interest, which will help improve the yield of the fishery increase.

The integration of local social networks at the local level, identified through traditional knowledge of patterns of use of high commercial value species, can generate subsidies for comprehensive and sustainable management and co-management tools. Therefore, it provides a bridge for fishermen to communicate with managers and

enables productive conservation of the social ecosystem associated with the target species. The LEK is known to be affected by several factors, including the age of the fisherman. However, in the context of shrimp fishing by small artisans, fishermen were relatively familiar with shrimp breeding and migration, regardless of age. The fact that these species have a continuous breeding cycle allows fishermen to track the breeding cycle of the species throughout the year, mainly for white and pink shrimp that migrate and breed in estuary environments. LEK acquisition and development is expected to proceed through a passive adaptation process, depending on the cumulative experience in the environment. Our study suggests that this applies only to low-scoring subjects (feeding, mortality, growth) and older fishermen (41 years and older). Years of experience gained by older fishermen are especially evident in their knowledge of more sophisticated and difficult-to-observe bioecological topics. Ecological information provided by fishermen, combined with experimental scientific information, better supports the assessment of the fishery industry, and provides spatially distributed species with positive social, economic, and environmental outcomes you can even predict changes.

We conclude that there are spatial similarities in fishermen's LEK connectivity, primarily related to the breeding and migration dynamics of the target species, but there are also differences informed by fishermen's experience and local interests. Managers who initiate co-management arrangements using replication and migration reference variables as benchmarks will be more successful if they include LEK in their decisions. Regional similarities in knowledge support the implementation of management policies at the regional level, potentially reducing conflicts within the fishing community and increasing resource utilization efficiency.

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**Received:** 04-Jan-2022, Manuscript No. JCZM-21-15553; **Editor assigned:** 06-Jan-2022, PreQC No. JCZM-21-15553 (PQ); **Reviewed:** 20-Jan-2022, QC No. JCZM-21-15553; **Revised:** 24-Jan-2022, Manuscript No. JCZM-21-15553 (R); **Published:** 31-Jan-2022, DOI: 10.35248/2473-3350.22.25.1000482

**Citation:** Alshawaf M (2022) Tropical Artisan Shrimp Knowledge Network. J Coast Zone Manag. 25: 482.

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