

## Comparing the similarity of paddy invertebrate community structure in the Northern Coastal Mountain range<sup>1</sup>

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### Abstract

Biodiversity has aroused huge attention for the ecosystem function offering. Surveys were conducted on Socio-ecological Production Landscape and Seascape of North coastal mountain range to investigate the species diversity ( $\alpha$  diversity) and community structure of aquatic and rice straw invertebrate. Compositional similarities among the samples from various landscape regions and agricultural manipulations were examined by cluster analysis and it converts the similarity distances between samples into a dendrogram by the group average method. ANOSIM was used to detect whether there exist statistical significance between factor levels. SIMPROF was then able to define the proper sorted groups due to permutation that differ to the subjective intention. Results show that the landscapes composition is a dominant explanatory factor than artificial manipulation to divided samples (rice straw assemblage: Global R= 0.861,  $p < 0.001$ ; aquatic assemblage: Global R= 0.749,  $p = 0.001$ ). In the Comparison of rice straw assemblage by agricultural manipulations, Dewu's conventional flooded fields and organic flooded fields are alike. It implies maintaining more water management may produce similar impact as same as conventional farming for straw organisms. In the contrast, the aquatic assemblage of the conventional field in Dewu is rather similar to water-saving irrigation fields for a different reacted trend. As examination of feeding groups, Sin-she have relatively higher ratio of scavengers in rice straw and also higher collectors in aquatic habitat. For species that are susceptible to drought, relevant habitats should be managed around the rice fields based on their survival needs. For instances, ditches, ponds, and open channels will help to maintain biodiversity and ecosystem Services.

Keyword: rice, agroecosystem, biodiversity, SIMPROF, saving water irrigation

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