



Techno policy aspects and socio-economic impacts of eco-industrial networking in the fishery sector: experiences from An Giang Province, Vietnam

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ABSTRACT

Eco-industrial networking is considered as a new approach for businesses to improve their competitiveness, economic viability and human and ecosystem health. A cyclic material flow with alternative usage of all materials in the loop is an essential feature of an eco-industrial network. While eco-industrial networking has been primarily applied on the high-tech sector, this paper attempts to apply the principles on the fishery sector of An Giang, a Vietnamese province in the Mekong River Delta. An Giang Province has its own market share in the trade of Tra and Basa fish. The industries in the value chain of Tra and Basa are in a situation that forces them to improve their competitiveness to retain the market share. It was found that forming an eco-industrial network and recruiting new businesses to utilize all materials in the process provides additional revenue apart from reducing waste disposal concerns. This paper details the current market situation, the issues faced and material flow patterns and presents a feasible eco-industrial network. The results of the study indicate that the eco-industrial network creates positive impacts in terms of increased competitiveness, improved socio-economic conditions and cleaner environment.

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1. Introduction

1.1. Eco-industrial network

The earth has been facing tremendous pressure due to population explosion, rapid urbanization and ongoing industrialization. The day-to-day needs of people have been increasing at an exponential rate such that abundant resources a few years back have now become scarce. This rate of resource exploitation is unsustainable.

Consumption apart, the rate and quantity of waste generation have been alarming in most developing countries. Industrial production processes and domestic consumption patterns have changed in such a way that a considerable portion of resource is discarded without any use and called waste. Resource consumption and waste generation are found to be the two sides of the development coin.

This does not necessarily mean that development should be retarded to keep in pace with resource regeneration or waste assimilation rates. Production processes aimed at optimum raw material consumption, systems aimed at efficient sharing and utilization of resources and technologies focused at alternative use of discarded materials are imperative to reduce resource depletion and waste generation crises.

Production processes, systems and (or) technologies cannot single-handedly transform the consumption and disposal patterns. Appropriate policies are essential and have proved to be effective tools in the management of resources. A paradigm shift from command and control based environmental protection to market-based instruments has proved to be successful in many places. All or part of these market-based instruments is often integrated cross-boundary policies. Various instances of environmental protection and resource conservation through integrated policies are seen across the globe, thus demonstrating their roles. Therefore, the development of appropriate policies adequately considering development priorities and environmental pressures is of paramount importance as well.

An eco-industrial network is “a community of manufacturing and service businesses seeking enhanced environmental and

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