

ACADEMIC CONTRIBUTIONS OF DOCTORAL THESIS

1. Title: *Study on Delimitating aqua-ecological zones in the Mekong Delta region under conditions of climate change*

- Code: 62850101

- Field of study: Management of Natural Resources and Environment

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3. Instructors: As.Prof. Doan Ha Phong

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Organization: Vietnam Institute of Meteorology, Hydrology and Climate change

4. Thesis Introduction

The thesis “*Study on Delimitating aqua-ecological zones in the Mekong Delta region under conditions of climate change*” focus on: (1) To Establish Evident-based for Aqua - Ecological zoning in climate change condition; (2) To conduct delimitating aqua-ecological zones in the Mekong Delta region under conditions of climate change; (3) To provide measurements for spatial aquaculture management in in climate change condition.

The thesis consist of three chapters:

Chapter 1: Overview

- (i) Concepts related to zoning, ecology, and impacts of climate change on aquaculture;
- (ii) status of the study;
- (iii) Features of study area;
- (iv) Issues of the study

Chapter 2: Approaches and methods of the study

This chapter is highlighted with the following contents

(i) Approach: Describe the approach to achieve the objectives of the study on Delimitating aqua-ecological zones in the Mekong Delta region under conditions of climate change

(ii) Data collection, standardization and generation : To Describe methods of collection, standardization, modelization and analysis of spatial data related to aquaculture in the Mekong Delta.

(iii) Implementation methodology: Describe the methodology used to perform partitioning, how to analyze, build and integrate spatial data.

Chapter 3: Results and Discussion

- To Establish evident-based for Aqua - Ecological zoning in climate change condition: Include a recommended approach and principles for aqua-ecological zoning process;

- To implement aqua-ecological zones in the Mekong Delta region under conditions of climate change with two section including: (i) aqua-ecological zones under conditions of climate change and (ii) aqua-ecological zones impact of extreme and climate change.

- To nest aqua-ecological zones in spatial planning: to recommend models of aquaculture adaptive climate change for water resources of ecology

5. List of contribution

(i) To Establish evident-based for Aqua - Ecological zoning in climate change condition including:

- The study provide theory, scientific evidence of the impact of climate change in the ecological zoning for aquaculture in accordance with the characteristics of the Mekong Delta;

- Principles for Aqua - Ecological zoning: (1) In line with the development objectives of the aquaculture sector, multidisciplinary and regional; (2) Considering the function of ecological regions; (3) Aqua - Ecological zoning should be based on balance and harmony between regional ecological characteristics and characteristics of aquaculture species:

- Criteria selection for Aqua - Ecological zoning should be based on stability in a season of aquaculture

(ii) Modeling water resources based on local and MeKong scenario of climate change for Aqua - Ecological zoning. The results of the study delimitating in to 8 types of Aqua – Ecological zone including: Brackish water, Transitional


zone, Seasonal brackish-water, Salt prevention, Seasonal flood and salt water, No or moderately inundated flood, Semi-inundated flood, Inundated flood area and corresponding to their scenario of status, year 2030 and 2050.

(iii) Proposals the models of rotation/mix agriculture-aquaculture adapt to climate change for appropriate spatial planning in the context of climate change in the Mekong Delta.

The results provide a scientific basis to help local managers and aquaculture sector in spatial planning aquaculture development.

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