The Influences of Shrimp Farming and Fishing Practices on Natural Fish Conservation in Can Gio, Ho Chi Minh City, Vietnam

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University of Newcastle, Australia
Declaration

I hereby certify that the work embodied in this thesis is the result of original research and has not been submitted for a higher degree to any other University or Institution.

Signed: ............................
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration</td>
<td>i</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>ii</td>
</tr>
<tr>
<td>Publications</td>
<td>iii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xiii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>xiv</td>
</tr>
<tr>
<td>CHAPTER 1 - INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Background Information</td>
<td>1</td>
</tr>
<tr>
<td>1.2 Economic Development</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Issues Regarding Environmental Degradation and Resource Conservation</td>
<td>4</td>
</tr>
<tr>
<td>1.4 Research Gaps</td>
<td>7</td>
</tr>
<tr>
<td>1.5 Rationales</td>
<td>9</td>
</tr>
<tr>
<td>1.6 Overall Objective</td>
<td>10</td>
</tr>
<tr>
<td>1.7 Specific objectives</td>
<td>10</td>
</tr>
<tr>
<td>CHAPTER 2 - LITERATURE REVIEW</td>
<td>13</td>
</tr>
<tr>
<td>2.1 Environmental Degradation</td>
<td>14</td>
</tr>
<tr>
<td>2.1.1 Water Pollution</td>
<td>14</td>
</tr>
<tr>
<td>2.1.2 Negative Impacts of Water Pollution</td>
<td>17</td>
</tr>
<tr>
<td>2.1.3 Discharge from Shrimp Farming in Focus</td>
<td>20</td>
</tr>
<tr>
<td>2.1.4 Habitat Loss</td>
<td>23</td>
</tr>
<tr>
<td>2.2 Over-Fishing</td>
<td>24</td>
</tr>
<tr>
<td>2.3 Mismanagement in the Capture Fisheries Industry</td>
<td>27</td>
</tr>
<tr>
<td>2.4 Mismanagement in Coastal Aquaculture</td>
<td>28</td>
</tr>
<tr>
<td>2.5 Good Practice Experiences</td>
<td>30</td>
</tr>
<tr>
<td>2.6 Current Status of Capture Fishery and Shrimp Farming in Vietnam</td>
<td>33</td>
</tr>
<tr>
<td>2.6.1 Capture Fishery Development and Its Issues</td>
<td>33</td>
</tr>
<tr>
<td>2.6.2 Shrimp Farming</td>
<td>35</td>
</tr>
<tr>
<td>2.7 Research Needs</td>
<td>38</td>
</tr>
<tr>
<td>CHAPTER 3 - METHODOLOGY</td>
<td>39</td>
</tr>
<tr>
<td>3.1 Description of the Study Area</td>
<td>40</td>
</tr>
<tr>
<td>3.1.1 Natural Conditions</td>
<td>40</td>
</tr>
<tr>
<td>3.1.2 Governance Framework</td>
<td>42</td>
</tr>
<tr>
<td>3.1.3 Capture Fisheries</td>
<td>42</td>
</tr>
<tr>
<td>3.1.4 Shrimp Farming</td>
<td>43</td>
</tr>
<tr>
<td>3.2 Methods for Environmental Survey</td>
<td>45</td>
</tr>
<tr>
<td>3.2.1 Experimental Design</td>
<td>45</td>
</tr>
<tr>
<td>3.2.2 Water Sample Collection</td>
<td>47</td>
</tr>
<tr>
<td>3.2.3 Sample Analysis Methods</td>
<td>50</td>
</tr>
<tr>
<td>3.2.4 Fish Sample Collection</td>
<td>51</td>
</tr>
<tr>
<td>3.2.5 Biodiversity – Qualitative Approach</td>
<td>52</td>
</tr>
<tr>
<td>3.2.6 Biodiversity – Quantitative Approach</td>
<td>53</td>
</tr>
<tr>
<td>3.2.7 External Visible Fish Disease</td>
<td>54</td>
</tr>
<tr>
<td>3.2.8 Data Analysis</td>
<td>54</td>
</tr>
</tbody>
</table>
3.2.8.1 Water Quality ................................................................. 55
3.2.8.2 Fish Community ............................................................ 56
3.2.8.3 Relationship between Water Quality and Fish Biodiversity ...... 56

3.3 Method for Social Survey ............................................................... 56
  3.3.1 Interviews .............................................................................. 57
    3.3.1.1 Local Authorities ......................................................... 58
    3.3.1.2 Interviews with Shrimp Farmers, Fishers and Fish Retailers ..... 58
  3.3.2 Direct Observation ................................................................. 59
  3.3.3 Secondary Data Review .......................................................... 60
  3.3.4 Data Analysis ........................................................................ 60

3.4 General Assessment Flow Chart .................................................. 61

CHAPTER 4 - ASSESSMENT OF SHRIMP FARMING EFFLUENTS ON WATER
QUALITY AND FISH COMMUNITIES ............................................. 63
4.1 Effects on Water Quality .............................................................. 64
  4.1.1 Temperature (°C) ................................................................. 65
  4.1.2 Salinity (‰) .......................................................................... 66
  4.1.3 pH ....................................................................................... 68
  4.1.4 Dissolved Oxygen ............................................................... 69
  4.1.5 Biochemical Oxygen Demand ............................................. 72
  4.1.6 Chemical Oxygen Demand ............................................... 76
  4.1.7 Nitrite ................................................................................. 78
  4.1.8 Ammonia ............................................................................ 80
  4.1.9 Transparency ....................................................................... 83
  4.1.10 Total Nitrogen ................................................................. 86
  4.1.11 Total Phosphorus ............................................................... 88
  4.1.12 Chlorophyll-a ................................................................. 90
  4.1.13 Overall Summary of Water Quality in the Study Sites ......... 92
  4.1.14 Secondary Data on Water Quality ........................................ 95
4.2 Effects of Water Pollution on Natural Fish .................................. 101
  4.2.1 Species Richness (qualitative approach) ............................. 102
  4.2.2 Correlation Test ................................................................. 105
  4.2.3 Species Abundance (quantitative approach) ......................... 106
  4.2.4 Externally Visible Diseases ................................................ 109

CHAPTER 5 - SHRIMP FARMING PRACTICES AND ENVIRONMENTAL
CONCERNS .............................................................................. 113
5.1 Background Information ............................................................ 114
5.2 Farming Calendar ....................................................................... 115
5.3 Farm Area .................................................................................. 120
5.4 Water Intake Treatment .............................................................. 122
5.5 Chemicals Used in Treatment of Supplying Water ....................... 124
5.6 Stocking density .......................................................................... 125
5.7 Water Exchange .......................................................................... 128
5.8 Feeds and Feeding ...................................................................... 132
5.9 Chemicals and Biological Products Used during Grow-out Phase .... 134
5.10 Pond Cleaning and Sediment Disposal ..................................... 141
5.11 Self-Pollution ............................................................................ 146
5.12 Installing Wastewater Treatment Pond ...................................... 148
7.1.2.1 Farm Design and Wastewater Treatment Models ........................................ 248
7.1.2.2 Stocking Density .......................................................................................... 252
7.1.2.3 Feed and Feeding Management .................................................................. 252
7.1.2.4 Shrimp Health Management ..................................................................... 254
7.1.2.5 Sediment Management .............................................................................. 256
7.1.3 Other Consideration for a Sustainable Industry ............................................. 257
7.2 Capture Fishery Management .......................................................................... 258
7.2.1 The Fishery Problem ...................................................................................... 258
7.2.2 Alternative Management Measures ................................................................. 259
7.2.3 Establishing an Appropriate Model for Capture Fishery Management ......... 262
7.2.3.1 Supra-Community Level .......................................................................... 263
7.2.3.2 Community Level ....................................................................................... 265
7.2.3.3 Individual Level ......................................................................................... 270
CHAPTER 8- CONCLUSION ...................................................................................... 273
8.1 Issues in Shrimp Farming ................................................................................... 273
8.2 Issues in Capture Fishery .................................................................................. 276
8.3 Solutions for Sustainable Industries ................................................................. 276
8.4 Limitations and Recommendations .................................................................... 279
REFERENCES ............................................................................................................ 281
APPENDICES .............................................................................................................. 296
Appendix A.1 Checklist for authority interview ....................................................... 296
Appendix A.2 Questionnaire for interview with shrimp farmers .............................. 297
Appendix A.3 Questionnaire for interview with fishers ............................................ 301
Appendix A.4 Questionnaire for interview with fish retailers ................................. 305
Appendix B.1 Intensive shrimp farms in Can Gio, using paddle wheels for aeration of pond water ..................................................................................................................... 308
Appendix B.2 A water jet used in washing the top layer of pond sediment out of the pond ...................................................................................................................... 309
Appendix B.3 Sediment accumulated in a shrimp pond after a crop ....................... 309
Appendix B.4 Pond sediment is removed and put on the top of an embankment ....... 310
Appendix B.5 A feeding tray used in shrimp farms to detect uneaten feed ............ 310
Appendix B.6 Harvesting shrimp using a seine net .................................................. 311
Appendix C.1 Can Gio mangroves become a biosphere reserve ............................. 311
LIST OF FIGURES

Figure 1.1: Location of the study area (Can Gio district, Ho Chi Minh city, Vietnam) ............ 2

Figure 3.1: Map of Can Gio with 3 sampling areas, adapted from Thiet (2005). Area1 represents improved extensive shrimp farm areas (control sites); area2 represents concentrated intensive and semi-intensive farm area (high-impact sites); area3 represents semi-intensive and rice-shrimp rotating farm area (moderate-impact sites). The “black points” indicate sampling sites. ................................................................. 41

Figure 3.2: Most abundant gear types in Can Gio (Picture sources: FAO, 2000b; King, 2007) ................................................................................................................................................. 43

Figure 3.3: Experimental design for water sampling. A1-A3: studied areas (see Figure 3.1). A2 stem shows details, S1-S3: replicated sites; WET: the wet season and DRY: the dry season; T1-T3: three sampling times in each season, R1-R3: replicated samples.48

Figure 3.4: HORIBA U-23 field set for measuring some parameters in situ....................... 49

Figure 3.5: Secchi disk for measuring water transparency. .................................................. 49

Figure 3.6: Kemmerer water sample bottle used for water sampling, collected at bottom water (0.5 meter above bottom) with exception of samples for chlorophyll-a. ........... 49

Figure 3.7: Fish sampling and analyzing process for water pollution assessment.............. 54

Figure 3.8: Flow chart for the assessment of fisheries management. Two main data collection channels were conducted, including environmental surveys and interviews with local people. A supplementary source of data was from direct observation during the fieldworks and document review. Data analysis will address problems associated with shrimp farming and fishing practices; and proposed strategies are made for the improvement of fisheries management in Can Gio...................................................... 62

Figure 4.1: Variations of water temperature (°C) in the study areas, showing a seasonal difference, but both were in the range of optimal conditions for warm-water fish communities (Swann, 1997). ................................................................................................................................................. 66

Figure 4.2: Comparison of salinity at the three study areas, showing the seasonal and location variations. Area1, Area2 and Area3 stand for the three study areas with different shrimp farming systems. The number in each bar presents a seasonal mean salinity. ................................................................................................................................................. 67

Figure 4.3: Comparisons of pH in the three study areas, showing a significant difference between Area2 and Area3, but all three study areas had acceptable pH for maintaining normal fish health (Mason, 2001). Different letters above each bar indicate significant differences (P<0.05). ................................................................................................................................................. 69

Figure 4.4: Comparison of DO in the three study areas (Area1, Area2 and Area3), showing variations depending on seasons and locations. The number in each bar indicates seasonal mean DO, with Area1: ranged 5.0-5.38 mg/L (annual mean = 5.18 mg/L), Area2: ranged 2.71-2.99 mg/L (annual mean = 2.85 mg/L), Area3: ranged 3.39-3.54 mg/L (annual mean = 3.46 mg/L). Error bar indicates standard deviation (SD). ........ 70

Figure 4.5: Comparison of BODs in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for a seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 6.4-8.5 mg/L (annual mean = 7.4 mg/L), Area2: ranged 11.3-23.8 mg/L (annual mean = 17.5 mg/L), Area3: ranged 10.1-20 mg/L (annual mean = 15 mg/L). ....................... 73
Figure 4.6: Comparison of COD in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for a seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 14.7-21 mg/L (annual mean = 17.8 mg/L), Area2: 48.1-58.9 mg/L (annual mean = 53.5 mg/L), Area3: ranged 35.2-55.4 mg/L (annual mean = 45.3 mg/L). ........................................ 77

Figure 4.7: Comparison of NO$_2$-N in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for a seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 0.007-0.026 mg/L (annual mean = 0.016 mg/L), Area2: ranged 0.075-0.159 mg/L (annual mean = 0.117 mg/L), Area3: ranged 0.033-0.107 mg/L (annual mean = 0.07 mg/L). ........................................................................................................................... 79

Figure 4.8a: Comparison of NH$_3$-N in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for a seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 0.0042-0.0003 mg/L (annual mean = 0.023 mg/L), Area2: ranged 0.0302-0.0796 mg/L (annual mean = 0.055 mg/L), Area3: ranged 0.0387-0.0397 mg/L (annual mean = 0.039 mg/L). ....................................................................................................................... 81

Figure 4.8b: Comparison of TAN in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for a seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 0.02-0.12 mg/L (annual mean = 0.073 mg/L), Area2: ranged 2.01-2.2 mg/L (annual mean = 2.1 mg/L), Area3: ranged 1.2-1.73 mg/L (annual mean = 1.46 mg/L). ............................................................... 83

Figure 4.9: Comparison of transparency (Secchi depth) in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for seasonal mean with error bars indicating standard deviation (SD). Area1: ranged 31.3-37.4 cm (annual mean = 34.3 cm), Area2: ranged 17.1-17.8 cm (annual mean = 17.4 cm), Area3: ranged 18.9-19.4 cm (annual mean = 19.1 cm). .... 85

Figure 4.10: Comparison of TN in the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for seasonal mean of TN with error bars indicating standard deviation (SD). Area1: ranged 1.5-1.7 mg/L (annual mean = 1.57 mg/L), Area2: ranged 3.2-3.2 mg/L (annual mean = 3.2 mg/L), Area3: ranged 2.3-2.6 mg/L (annual mean = 2.4 mg/L). ....................... 87

Figure 4.11: Comparison of TP in the three study areas, showing the seasonal and location variations. Error bars indicate standard deviation (SD). Area1: seasonal mean ranged 0.06-0.08 mg/L (annual mean = 0.07 mg/L), Area2: seasonal mean ranged 0.32-0.46 mg/L (annual mean = 0.39 mg/L), Area3: seasonal mean ranged 0.26-0.36 mg/L (annual mean = 0.31 mg/L). ......................................................................................................................... 89

Figure 4.12: Comparison of Chlorophyll-a at the three study areas (Area1, Area2 and Area3), showing the seasonal and location variations. The number in each bar stands for seasonal mean of Chl-a with error bars indicating standard deviation (SD). Area1: ranged 6.65-6.84 µg/L (annual mean = 6.74 µg/L), Area2: ranged 7.32-7.32 µg/L (annual mean = 7.32 µg/L), Area3: ranged 6.5-6.8 µg/L (annual mean = 6.65 µg/L). 91

Figure 4.13a: Total ammonia nitrogen (TAN) and pH measured at Area3 during high tides at surface water layers (Source: The Can Gio Station for Aquatic Animal Epidemic Control, 2006). ........................................................................ 96
Figure 4.13b: Salinity (‰) and COD (mg/L) measured in Area3 during high tides at surface water layers (Source: The Can Gio Station for Aquatic Animal Epidemic Control, 2006). ............................................................................................................. 97

Figure 4.14a: Total ammonia nitrogen (TAN) and pH measured in Area2 during high tides at surface water layers (Source: The Can Gio Station for the Aquatic Animal Epidemic Control, 2006). ............................................................................................................. 98

Figure 4.14b: Salinity (‰) and COD (mg/L) measured in Area3 during high tides at surface water layers (Source: The Can Gio Station for Aquatic Animal Epidemic Control, 2006). ............................................................................................................. 99

Figure 4.15: Variation in number of species among 3 targeted areas, showing significant higher number of species observed in Area1 as compared to Area2 and Area3. Different letter above the bars indicated significant different at P<0.001. Error bars indicate standard deviation (SD). ............................................................................... 103

Figure 4.16: Percentage of caught species in Area1, Area2 and Area3, showing that some specific species appeared at one area with much higher frequencies but only low frequencies at another area........................................................................................ 107

Figure 4.17: Symptoms of external diseases collected in Can Gio. (A) and (B) show skin damages. (C) and (D) show bone deformity. (E) shows fin erosion.................................................. 111

Figure 5.1: The common farming calendar of shrimp culture in Can Gio, showing main crops (crop1) conducted mostly in the dry season when higher salinities occur and crop2 in the wet season when lower salinities occur. (*) data from this current study. .................................................................................................................................... 116

Figure 5.2: Crop timing for crop1, showing percentages of farmers conducting their crops. Duration under each bar (e.g. Dec-Mar) indicates “month at releasing seed-month at harvesting”. The highest percentage of farmers (54.3%) released shrimp seeds in March and harvested in July, followed by 41.3% of them who released in February and harvested in June. ........................................................................................................................... 117

Figure 5.3: Crop timing for crop2, showing percentages of farmers conducting their crops at different time. The duration under each bar (e.g. May-Sep) indicates “month at releasing seed-month at harvesting”. The majority of farmers (89.1%) released shrimp seeds in September and harvested in January. ...................................................................................................................... 118

Figure 5.4: Distribution of farm sizes, showing that most intensified shrimp farms occupied from 1 to 3 hectares of pond areas (only areas of water surface of ponds were counted)............................................................................................................. 121

Figure 5.5: Distribution of pond sizes, showing that the majority (97.8%) of intensified shrimp ponds in Can Gio were less than 1 ha in size.................................................................................. 122

Figure 5.6: Distribution of shrimp farms having reservoirs or ponds for water intake treatment, showing the majority of farms having one-third of land or more for water treatment................................................................. 123

Figure 5.7: Distribution of stocking density applied in Can Gio during crop1, showing most farmers stocked at 30 PL/m² or more............................................................................................ 125

Figure 5.8: Distribution of stocking density applied in Can Gio during crop2, with mean of 25 PL/m². ............................................................................................................................................ 127

Figure 5.9: Time to begin water exchange where the earliest time was after 1 month of seed releasing. Where “others” indicates that water exchange was conducted whenever the pond water turned too dark or turbid by farmer’s experience........................................ 129
Figure 5.10: Percentage of farmers applying different water exchange rates, for example nearly 24% of farmers conducted water exchange at a rate of 15% (or less) pond water per day. ....................................................................................................................... 130

Figure 5.11: Percentage of farmers conducting water exchange at different number of days per month, for instance 8.7% farmers exchanged water in 1 to 2 days monthly. ...... 131

Figure 5.12: Percentage of farmers using different methods in monitoring uneaten feed. 133

Figure 5.13: Proportion of farmers using different groups of products during grow-out phase of shrimp farming. ........................................................................................................... 136

Figure 5.14: Proportion of farmers using micro-organism products to improve the quality of pond water during grow-out phase, where “Yes”: used these products, and “No”: did not use them. .................................................................................................................. 140

Figure 5.15: Proportion of farmers showing their opinions about the wastewater discharge in relation with environmental impacts................................................................. 144

Figure 5.16: Proportion of farmer’s awareness of the adverse impacts of shrimp effluents on natural fish........................................................................................................ 145

Figure 5.17: Proportion of farmers who experienced water pollution during shrimp farming, showing over 95% farms were affected by water pollution, of which 45.7% by shrimp farm effluent alone............................................................ 147

Figure 5.18: Proportions of farmers who received some kinds of support from the government, showing that approximately 26% of local farmers did not receive government support........................................................................................................ 160

Figure 5.19: Education levels of the farmers in Can Gio (Primary school: grade 1-5; Secondary school: grade 6-9; High school: grade 10-12; Tertiary school: university and vocational trainings. ........................................................................................................ 161

Figure 5.20: Distribution of farmers’ experience, showing the percentage of farmers with the number of years they have been farming. The highest percentages fell into 5-7 years. .......................................................................................................................... 163

Figure 6.1: Proportion of fishers operating at different fishing grounds, showing the majority operated in main rivers, while the lowest proportion fished on tidal flats. . 178

Figure 6.2: Stand fence setting along river bank .............................................................. 178

Figure 6.3: Trawling in main river .................................................................................... 178

Figure 6.4: Proportion of gear types used by the interviewed fishers, showing stow nets were most frequently used, followed by gill nets, trawl nets and lastly stand fences.179

Figure 6.5: Using small mesh size (16 mm) in trawl nets.................................................. 182

Figure 6.6: Codend of a stow net, made of a fine mesh panel that can catch tiny fishes. . 182

Figure 6.7: Proportion of fishers selecting different target species for their fishing. All finfish species were targeted in Can Gio inshore fisheries. 183

Figure 6.8: Proportion of fishers reporting target and non-target catches, showing only 3% not experiencing non-target catches; the majority experienced incidental catches with different sizes which were dominated (70%) by very small fish........................................ 184

Figure 6.9: The use of non-target catches for various purposes at the study area; the highest proportion was used as trash fish. .............................................................. 185

Figure 6.10: Catching these undersize mullets can cause stock depletion.................... 186

Figure 6.11: Drying non-target-mix species for family consumption............................... 186

Figure 6.12: Trends of change in catch duration recently in Can Gio, showing the majority of fishers’ fishing duration remained unchanged (77%), while 13% increased and 10% decreased the time. ........................................................................................................... 189
Figure 6.13: Reasons for different trends of changing catch duration (bars represent proportion of fishers within each category), showing 100% of fishers increased their fishing time for higher incomes. While fishers whose fishing time remained unchanged because fishing was not their main job (17%), relying on tide regimes (48%), no idea (30%) and “just enough” incomes (4%). Fishers who decreased fishing time because fishing generated too little profit (67%) and more gear had been invested in (33%).

Figure 6.16: Different reasons and its proportion for fishers’ intention, either increasing or not increasing fishing effort, showing that the local fishers intended to increase fishing efforts for higher incomes, while the others did not intend to expand due to economic or legal restrictions.

Figure 6.15: Trends of individual fish sizes caught in recent years under fishers’ and fish retailers’ experiences, showing that the size caught were smaller (73% respondents) or remained the same (27%).

Figure 6.16: Setting a stand fence with fine mesh size net like this along the river banks has been popular in Can Gio.

Figure 6.17: A fisher was carrying a small seine-net equipped with electric shock device to fishing grounds.

Figure 6.18: Proportion of fishers’ experiences regarding the relationship between water quality (indicated in water color) and fish catch.

Figure 6.19: Results from interviewing fishers and fish retailers regarding trends of fish resource availability in recent years, with the major declining trend of fish stocks reported by approximately 62% of the interviewees.

Figure 6.20: Proportion of local fishers willing to involve themselves in monitoring the fishing activities, with the majority (67%) supporting this management regime.

Figure 6.21: Distribution of fishers’ experience indicated in years of fishing operation, showing the majority of the local fishers spent an average of 9.4 years fishing.

Figure 6.22: Proportion of the local fish retailers observing fish bearing mature eggs/testicles at different frequencies, showing 10% of them experiencing those very often, 47% often and 45% rarely.

Figure 6.23: Fish bearing eggs like this can be frequently observed in Can Gio markets.

Figure 6.24: Specific species bearing mature eggs/testicles were traded in Can Gio markets, reported by fish retailers. Bars indicate percentage of the reporters.
LIST OF TABLES

Table 2.1: Classification of water eutrophication (by Mason, 2001), showing ranges of some water quality parameters at 3 trophic levels. ................................................................. 19

Table 3.1: Status of shrimp farming in Can Gio in 2005, showing farm areas and production of different farm types ................................................................................. 44

Table 3.2: Commercially valuable species in Can Gio defined by local fishers ............... 52

Table 3.3: Vietnamese standards on allowable limits of water pollution. Source: Vietnam Environmental Protection Agency (1995). ................................................................. 55

Table 4.1: Different levels of water pollution in the three study areas (Area1, Area2 and Area3) with indicating that the concentration exceeded the Vietnamese standards or standards used by other countries; : within allowable limits; and : moderate or lightly exceeded the standards. .................................................................................... 93

Table 4.2: Correlations between water quality and species richness, showing coefficient (r) with minus (-) values and plus (+) values for negative and positive correlations, respectively. ............................................................................................................... 105

Table 5.1: Chemicals and biological products used by shrimp farmers during grow-out phase in Can Gio, showing major groups, sub-groups and some specific examples. 135

Table 5.2: Proportion of shrimp farmers using different methods for cleaning ponds after harvesting. The figures indicate the percentage of total interviewed farmers. .......... 142

Table 5.3: Frequencies of farmers showing their willingness to reduce chemical use for different reasons ............................................................................................................. 153

Table 5.4: Farmers’ suggestions toward mitigating the environmental pollution caused by shrimp farming. ........................................................................................................... 155

Table 5.5: Proportion of farmers that were knowledgeable about restrictions on shrimp farming practices, n: indicates the number of respondents. ........................................ 158

Table 5.6: Reasons for site selections in Can Gio, showing that many site selections were based on economic aspects rather than technical ones ......................................... 164

Table 5.7: Suggestions from the local farmers for more a sustainable shrimp farming industry and mitigating the adverse impacts on the environment ......................... 166

Table 6.1: The status of fishing gears meeting the mesh size restriction, showing that most of the nets used in Can Gio did not meet the local regulations (*: applied for a mesh size of codend or bag where fish are held).................................................. 181

Table 6.2: Fishing duration of specific gear types in Can Gio, showing that different gear types were associated with differential time basis in fishing, but the fishers operating this gear had plenty of spare time ................................................................. 187

Table 6.3: Description of illegal fishing activities in Can Gio provided by the local fishers (the number in parenthesis indicates the reported times) ..................................... 199

Table 6.4: Sources of pollutants reported by the local fishers in Can Gio ....................... 207

Table 6.5: Fishers’ suggestions for the improvement of fisheries management in Can Gio. ................................................................................................................................. 215

Table 6.6: Undersize fish of specific species have been traded in Can Gio markets. Total length of individuals is presented in cm (mean ± standard deviation) ......................... 225
ABSTRACT

Shrimp farming and capture fishery are two of the major industries of Can Gio district, Ho Chi Minh City, southern Vietnam. These industries have recently developed and contributed to the improvement of local economy. However, they have also raised environmental concerns regarding water pollution and fish stock depletion. The negative impacts of shrimp farm effluents on the water quality of mainstream rivers and fish communities have not been studied in Can Gio. Additionally, there is a lack of research on the influence of the current fisheries management on environmental protection and fish conservation in this district. The goal of this study was to address key issues in fisheries management in Can Gio in regard to the impacts of wastewater from shrimp farming on the water quality of mainstream rivers that affect the local fish communities, and the influence of improper fishing practices that lead to the depletion of local fish stocks. This study also aimed to propose strategies to improve the local fisheries management for more environmentally responsible productions.

Two mainstream surveys were developed to obtain data, i.e. environmental surveys for the assessment of water quality and pollution impacts on fish communities; and people interviews for the examination of fisheries management related to shrimp farming and fishing practices. The findings were used as a baseline to develop appropriate strategies for improving the management in terms of promoting sustainable productions both in shrimp farming and capture fishery industries and protecting the environment.

This study found that shrimp farming, especially intensive farms have contributed to water pollution in mainstream rivers in Can Gio, and in turn the water pollution has adversely affected the local fish communities. The waters adjacent to the intensive farms were contaminated with high concentrations of organic matter. The number of fish species reduced and tolerant species appeared at higher proportions in these areas. Many improper practices in shrimp farming and fishing as well as weaknesses in government management were addressed to be the key issues leading to environmental pollution and fish depletion. The proposed strategies focused on improving the management at both government and community levels. Promoting community-based management was suggested as a key to the success in fisheries management in Can Gio.