

塞拉利昂个体渔业管理制度及其有效性研究

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厦门大学

硕士学位论文

塞拉利昂个体渔业管理制度及其
有效性研究

Artisanal Fisheries Management System in Sierra Leone and its
Effectiveness Assessment

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论文提交日期: 2016年8月

论文答辩时间: 2016年8月

2016年8月

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Abbreviations

ADB	: African Development Bank
AFDEP	: Artisanal Development Project
BSc	: Bachelor in Science
CCRF	: Code of Conduct for Responsible Fisheries
DEFID	: Department of International Development
DFMR	: Development of Fisheries and Marine Resources
EEZ	: Exclusion Economic Zone
EIA	: Environmental Impact Assessment
EJF	: Environmental Justices Foundation
EPA	: Environmental Protection Agency
EU	: European Union
FAO	: Food and Agricultural Organization
G7	: Grade Seven
GDP	: Gross Domestic Product
GoSL-MoFMR	: Government of Sierra Leone-Ministry of Fisheries and Marine Resources
IAFM	: Integrated Artisanal Fisheries Management
IEZ	: Inshore Exclusion Zone
IFM	: Integrated Fisheries Management
ILO	: International Labor Organization
IMBO	: Institute of Marine Biology and Oceanography
ISFM	: Institutional Support for Fisheries Management Project
ISU	: International Sustainability Unit
ITQ	: Individual Transfer Quota
IUCN-Med	: International Union for Conservation of Nature - Centre for Mediterranean Cooperation
IUU	: Illegal Unreported and Unregulated
LAPP	: Limited Access Privilege Programs
MAFMR	: Ministry of Agriculture Fisheries and Marine Resource
MCS	: Monitoring Control and Surveillance
MDG	: Millennium Development Goal
MoFMR	: Ministry of Fisheries and Marine Resources

MoMR	: Ministry of Marine Resources
MPAs	: Marine Protected Areas
MRAG	: Marine Resource Group
MSc	: Masters of Science
MSY	: Maximum Sustainable Yield
mt	: Metric tons
MTCA	: Ministry of Tourism and Cultural Affairs
NGO	: Non-Governmental Organization
OECD	: Organization of Economic Cooperation and Development
PhD	: Doctor of Philosophy
RAC/SPA	: Regional Activity Centre for Specially Protected Areas
RSLAF	: Republic of Sierra Leone Armed Forces
SLAAFU	: Sierra Leone Amalgamated Artisanal Fishermen Union
SLAFU	: Sierra Leone Artisanal Fishers Union
SLL	: Sierra Leone Leones
SRU	: German Advisory Council on the Environment
SSFs	: Small-scale Fisheries
STC	: Scientific and Technical Committee
Std	: Standard
TAC	: Total Allowable Catch
UN	: United Nation
UNDP	: United Nation Development Programme
VMS	: Vessels Monitoring System

摘要

海洋渔业对塞拉利昂的经济贡献极大，特别是个体渔业，是塞拉利昂蛋白质、就业和生计的主要来源。当前，由于产业性质的复杂性，塞拉利昂渔业，特别是近海隔离区的个体渔业，正面临着许多问题，包括渔业资源枯竭、过度捕捞、渔民冲突以及因个体渔业部门的管理不善而加剧的非法、未报告和未管制的渔业活动（IUU）。本研究的目的是从一个包含利益相关者、制度、政策和资源的综合管理的系统视角来评估个体渔业部门的渔业管理水平，并且根据公共资源完善的制度设计原则构建了一个用于评估个体渔业部门渔业管理水平的指标体系。该指标体系由明确的界限、在近海隔离区内使用资源的权利、遵守规章制度的水平、渔业管理过程中利益相关者的参与、监测和管控、资源状态的审计、资源冲突、渔民的组织权利和机构间的跨界联系。通过访谈 20 名渔业专家的方法来识别相关的指标用于回顾和分析个体渔业的管理系统。本研究采用百分比的名次排名法来进行验证分析。十四名渔业专家对相关指标的现状按照低效（1）、中等（2）、较好（3）和高效（4）来进行评分排名，然后用最高频率得分来合成每一指标的得分。

基于 9 个不同指标的分析，结果表明塞拉利昂的个体渔业管理系统有效性差。因为超过 60%的指标处于低效和中等水平，只有大约 33%的指标处于较好水平。这导致了 2010 至 2012 年非法、未报告和未管制的渔业活动增多。此外，个体渔业的产量在 2010 年至 2013 年下降了 10%。薄弱的监测和管控、利益相关者的参与、渔民权利、资源的权利和机构间的跨界联系导致总的鱼群数量减少。因此，需要强化个体渔业管理系统。

对于未来任何的监管和政策改革，有必要为当地利益相关者提供表达观点的机会，增强监测和管控系统，赋予地方政府议会的权利，并且关注能够改善整个行业发展现状的研究。本论文的研究结果可以为决策者寻求用于减缓个体渔业管理系统不利影响的解决方案提供帮助。如果个体渔业管理系统没有得到强化，个体渔业部门依然会面临很多问题。因此，需要制定适当的措施来改善个体渔业管理系统中处于糟糕状态的指标，从而实现个体渔业的可持续发展。

这一研究概括了塞拉利昂当前个体渔业管理系统和管理实践，以及个体渔业的法律法规和政策。本研究意识到地方到国家层面的不同渔业管理机构在个

体渔业管理方面做的努力，并且识别了需要改善的地方。为了制定能够用于显著改善渔业管理系统的一个更新的统一的渔业管理制度用于地方和国家层面的渔业管理，本研究建议对不同捕鱼社区中利益相关者的活动开展常规的科学研

关键词：个体渔业；近海隔离区；指标；原则；管理系统

厦门大学博硕士论文摘要库

Abstract

Marine fishery in Sierra Leone contributes greatly to the nation's economy, especially the artisanal fishery which serve as a major source of proteins, employment and livelihood. Sierra Leone is facing several fisheries problems due to the complex nature of the industry, particularly that of the artisanal fishery in the IEZ (Inshore Exclusion Zone). Such problems include but not limited to depletion of fishery resources, excessive fishing, conflicts among fishermen, violation of regulations and IUU (Illegal, Unreported and Unregulated) fishery activities which has been worsen by weak management in the artisanal fishery sector. This study aims at assessing the fisheries management in the artisanal sector from a perspective of an integrated management system incorporating stakeholders, institutions, policy and fish resource. Furthermore, an indicator system consist of: clear demarcation, right to use the resources in the IEZ, level of adherence to regulations. And the involvement of stakeholders in the fishery management process, monitoring and control surveillance, auditing the fish resource status, resource conflict, fishers right to organize and cross-scale connection among institutions. Were proposed through robust institutional principles of common pools resources. Interview approach was used on 20 fishers' experts in identifying the relevant indicators to have an overview of the artisanal fisheries management system and was used to carry out the analysis. A percentage grading approach was used to validate the analysis. Fourteen fishers experts carried out indicators grading from low=1, moderate=2, fair=3, and high=4. And later use the highest frequency grade in synthesizing each indicator.

Based on the analysis of 9 different indicators, our results show that the current artisanal fishery management system (AFMS) seems not to be an effective method. From the indicators utilized to measure the effectiveness, 6 out of nine indicated the AFMS as ineffective method as more than 60% are falling into low and moderate category. Approximately 33% falls into fair category of effectiveness showing that AFMS is not effective in Sierra Leone. This led to an influx of IUU in 2010-2012. Artisanal fishery production also showed a 10% decrease from year 2010 to 2013. The weak monitoring and control surveillance, stakeholder participation, fisher rights, right to resources and cross-scale connection among institutions has resulted to the decline of total fish stock due to poor auditing of fish status, thereby underlying the need to strengthen fisheries management system.

For any future regulations or policy reform to succeed, it will be necessary to give voice to local stakeholders, enhance the monitoring and control surveillance (MCS) system, empower the local government councils and focus on a continuous research that will enhance the fortunes of the industry. Results herein can be useful to decision-makers as they seek solutions to ease the negative impacts of the artisanal fishery management system in Sierra Leone. If the management system is not strengthened, it will continue to face many problems in the artisanal sector. Therefore adequate measures should be developed to improve on the indicators that are in a poor state for sustainable fishery in the artisanal sector.

This research display Sierra Leone current artisanal fishery management system and its management practices, laws, regulations and policy. It also recognized the efforts of different fisheries management bodies from local to national level and identify areas of improvement. This work advises regular scientific research on stakeholders' activities in different fishing communities in order to form an updated unified regulations at both national and local levels in the fishery industry. This can contribute immensely to enhanced fisheries management system.

Key Words: Artisanal Fishery, IEZ, Indicators, Principles, Management System

Chapter 1 Introduction

1.1 Background

A fisheries management system can be defined as the institutional structure and administrative routines intended to meet their objectives (WORLD BANK, 2004). Fisheries happens to be major source of proteins, employment, and livelihood and contribute greatly to national economy. Like many other West Africa countries, fisheries are important to the lives and livelihood of coastal communities in Sierra Leone. The country is presently under recovering from a 1-year 6-months Ebola epidemic outbreak that came to an end in 2015, killing and displacing thousands of people. This has led Sierra Leone being one among the least developed nations in the world, it was ranked 181th out of 188 countries in the 2015 human development index. Currently 52.9% of the population are living below the national poverty line, 28.5% are severely deprived in terms of health (UNDP, 2015). Child mortality rate in Sierra Leone is among the highest in the world, with one out five children dying at the age of five (WHO, 2014).

Fisheries happens to be one of the few resources of income and livelihood for many coastal communities. In 2006, Environmental Justice Foundation (EJF) on a governance studies presented that the fisheries sector contributed 9.4% of Sierra Leone's GDP and in 2005 it employed 243,500 people, with 30,000 being artisanal fishers and the remainders employed in the artisanal secondary sector of Sierra Leone (EJF, 2011). Fish is also the cheapest and affordable source of proteins in Sierra Leone, contributing 64% of the total animal protein consumed in the country (EJF, 2012). The artisanal fisheries management is very important not only for the hundreds of thousand that depend on fishing for their livelihood but also important to the population as a whole for food security.

Fisheries management is a key issue of importance in West Africa region of almost 300 million people, where fisheries represent up to 15-17% of their national GDP and up to 25-30% of export revenues, employs around 7 million, and provides up to 50% of total animal protein intake of the region's population while sustaining local livelihoods for coastal communities (OECD, 2008).

There have been several studies on the management of fisheries systems but due to the complexity of the industry identifying those to be entrusted with the management of the resources has been one area of concern to scholars. According to Berrill (1997) and

Harris (1998), in Lane and Stephen (1999), the consequence of those complexities plagues all attempts to manage the exploitation of marine living resources for sustainable economic development. Experts say more worrisome the need to create a dynamic system capable of overcoming many uncertainties common in the artisanal (small-scale) fishing sector of Sierra Leone. The artisanal fisheries in Sierra Leone operates in estuaries and inshore waters; extending from a shore line to a depth of 20-40 meter with principal unit from kru's dugout canoes, standard canoes; to Ghana type canoes (Ssentongo and Ansa-Emmim, 1986).

Thorpe et al (2008) show that artisanal fisheries sector of Sierra Leone employs the majority of the country's coastal population; and demonstrates how the conflict caused by major social dislocation to fishing communities is reducing the productive capacity of the fleet and fishery in the country. Artisanal fishery is facing a lot of challenges such as demarcation of zones, Illegal, unreported and unregulated (IUU) activities and conflict among fishermen. These have resulted to a rapid decline of fish stocks that hinder sustainability in the sector. Management is really a challenging process in this sector which is normally apply by stakeholders, institutions through regulations and laws to conserve the fish resource as a system.

Management of common pool resources analysis is occasionally related to fisheries management system. This study adopted the robust principles for institutions in Ostrom (2002), which involves the resources management; those that should manage the resources and what to use to manage the resources. It seeks to show the overall artisanal fisheries management system by critically reviewing the existing legislation, stakeholders and institutional participation and how it lead to the current trend of fish stock. The work is also geared at showcasing the effectiveness of the fisheries management system in artisanal sector.

1.2 Problem statement

Fish and fisheries are of great important worldwide especially people in coastal developing countries depend on them for their livelihood. The fisheries management has continued to face challenges. Resources and the environment are degraded when proper management measures are not applied. Marine artisanal fisheries management practices and challenges vary from country to country.

According to FishStat, the total marine food fisheries production in Sub-Saharan Africa stood at 3.4 million metric tons in 2007 (Gordon, et al., 2013). The total

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