DEVELOPMENT OF COMMUNITY BASED AQUACULTURE MODEL IN THE HILLY AREA OF BANGLADESH

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A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Fisheries Resource Management

Department of Fisheries Resource Management

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JUNE 2020

Authorization

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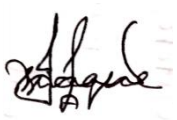

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LIST OF ABBREVIATIONS

MT	Metric Ton
CBFM	Community Based Fisheries Management
CBO	Community Based Organization
CBA	Community Based Aquaculture
USD	United States Dollar
GDP	Gross Domestic Product
DoF	Department of Fisheries
FAO	Food and Agriculture Organization
Ha	Hectare
IPM	Integrated Pest Management
NGO	Non-Governmental Organization
CBFC	Community Based Fish Culture
Kg	Kilogram
g	Gram
mg	Milligram
PRA	Participatory Rural Appraisal
UFO	Upazila Fisheries Officer
DO	Dissolved Oxygen
TSS	Total Suspended Solids
TDS	Total Dissolved Solids
mL	Milliliter
FIQC	Fish Inspection and Quality Control
BCSIR	Bangladesh Council of Scientific and Industrial Research

GIS	Geographic Information System
SPSS	Statistical Package for the Social Sciences
GPS	Global Positioning System
BDT	Bangladeshi Taka
^{o}C	Degree Celcius
cm	Centimeter
Km	Kilometer
μm	Micrometer
ppm	Parts per million
FGD	Focus Group Discussion
SWOT	Strengths, Weaknesses, Opportunities, and Threats
SIS	Small Indigenous Species
SV	Sample Volume
MEq	Milli equivalent
%	Percent
L	Liter

ABSTRACT

Aquaculture is a growing industry in Bangladesh that contributing to overall fish production and economic growth. Expansion of aquaculture activities in hilly regions is necessary for improving the livelihood status of people, and engaging women and youths in fish farming. There are various problems and challenges in developing sustainable aquaculture in the hilly regions. The study was conducted at Matiranga Upazila, Bandarban district, one of the major hill tract regions of Bangladesh to identify existing problems of aquaculture and finding applicable solutions. The study aimed to develop a community based aquaculture model (CBAM) based on the analysis of existing problems and prospects of aquaculture in the study area. The study was conducted through survey and laboratory analysis in order to examine existing practiced farming strategy. Different types of PRA tools including focus group discussion (FGD), field visit, and farmers' interview wereused to collect information on the existing farming strategy, problems, and prospects of aquaculture. Eleven species of fish were identified as culture species and polyculture(60%) was the most practiced methodof aquaculture in the study area. Transportation cost for seeds from remote sources was high (11% of total seed cost) and average mortality was recorded 7.2% for fry, 2.8% for fingerlings from the selected fish farms. The cost associated with feed was the major cost (58.4%) in aquaculture. Cost and revenue per decimal varied from 311 to3,528 BDT and 162 to 2,097 BDT respectively. Utilization of vacant lake, youth and women engagement, integrated aquaculture, people desire to engage in aquaculture, and available human resources were found as major prospects. The major problems were lack of hatchery, excessive feed cost, lack of stakeholder linkage, low fertility of the soil, and lack of proper knowledge, guidelines, and consultancy. A community based aquaculture model (CBAM) was developed based on the findings. The CBAM will help to improve the livelihood and income of the people of the study area and may contribute to sustainable aquaculture development in Bangladesh.

Key words: Aquaculture, Hilly Area, Community Based Aquaculture Model