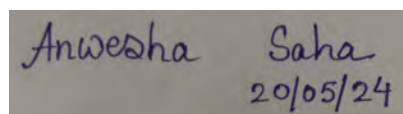


DEDICATION

I dedicate this thesis to my parents and my family members who has supported and co-operated each step in my life and to this work.

DECLARATION OF THE CANDIDATE

I do hereby declare that the thesis entitled “Study of Women’s Participation in Agriculture and Allied Sectors in Koch Bihar District of West Bengal” has been prepared by me under the supervision of Dr. Indira Lepcha Nee Lama, Associate Professor, Department of Geography and Applied Geography, University of North Bengal. This thesis is submitted for the fulfilment of the award of Doctor of Philosophy. The research work is an outcome of my own efforts and is an original one. I have designed the research work, collected the data, analysed the result, interpreted the findings. I further declare that this research work has not been published or awarded elsewhere, nor has been submitted in full or part for any other degree.



(Anwesha Saha, Researcher)

Department of Geography & Applied Geography
University of North Bengal



DEPARTMENT OF GEOGRAPHY & APPLIED GEOGRAPHY
UNIVERSITY OF NORTH BENGAL

ACCREDITED BY NAAC WITH GRADE B++

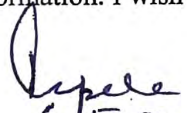
+91-0353-2776342
+91-0353-2699001
www.nbu.ac.in

RAJA RAMMOHUNPUR, P.O. NORTH BENGAL UNIVERSITY, DIST. DARJEELING, WEST BENGAL, PIN - 734013
Ph. No. +91-0353-2776342, FAX +91-0353-2699001, URL: www.nbu.ac.in

CERTIFICATE

This is to certify Smt. Anwesha Saha has prepared the thesis entitled "*Study of Women's Participation in Agriculture and Allied Sectors in Koch Bihar District of West Bengal*" for the award of Ph. D. degree in the Department of Geography & Applied Geography, Faculty of Sciences, University of North Bengal.

She has carried out the research work in the Department of Geography & Applied Geography, University of North Bengal based on primary data and secondary sources of information. I wish her all success in life.


6.15.2024
Indira Lepcha Nee Lama

Associate Professor
Department of Geography & Applied Geography
University of North Bengal



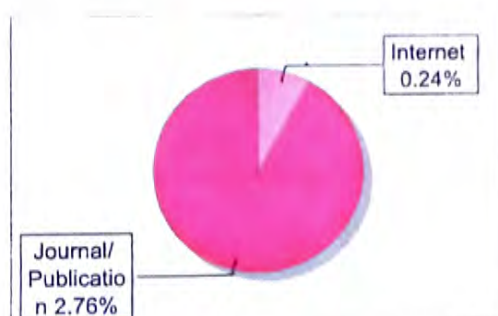
The Report is Generated by DrillBit Plagiarism Detection Software

Submission Information

Author Name	Anwesha Saha
Title	Study of Women's Participation in Agriculture and Allied Sectors in Koch Bihar District of West Bengal
Paper/Submission ID	1731492
Submitted by	nbuplg@nbu.ac.in
Submission Date	2024-05-02 15:35:14
Total Pages	121
Document type	Thesis

Result Information

Similarity 3 %

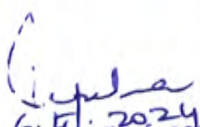


Exclude Information

Quotes	Excluded
References/Bibliography	Excluded
Sources: Less than 14 Words %	Excluded
Excluded Source	1 %
Excluded Phrases	Not Excluded

Database Selection

Language	English
Student Papers	Yes
Journals & publishers	Yes
Internet or Web	Yes
Institution Repository	Yes


6.5.2024
Associate Professor
Department of Geography &
Applied Geography
University of North Bengal

Anwesha Saha
20/05/24



ACKNOWLEDGEMENTS

I bend to the Almighty God for showering of blessing to me, pouring the strength and candor to complete my Ph. D. work.

I am grateful to my supervisors, Associate Professor Dr. Indira Lepcha Nee Lama, Department of Geography and Applied Geography, University of North Bengal for her guidance.

I express my sincere gratitude and respect to Prof. (Dr.) Mahendra Nath Roy, FRSC (London), Dean Faculty of Science, Arts Commerce & Law for his invaluable advice, continuous support, during my Ph.D. study and on overall perspective of life.

I would like to thank my Head of the Department, Prof. (Dr.) Deepak Kumar Mandal, Department of Geography & Applied Geography, Teaching Faculties other Academic Staffs. Their immense knowledge and plentiful experience have encouraged me in all the time of my Ph.D. research and associated work.

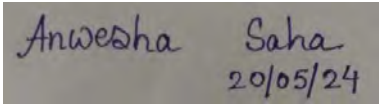
I am highly indebted to the Research Advisory Board Members and to Prof. (Dr.) Ranjan Roy for their cognitive help and academic support throughout my research work.

I would also like to thank Prof. Kausik Pradhan, Professor and head, Department of Agricultural Extension, Uttar Banga Krishi Vishwavidyalaya and his wife Mrs. Soma Pradhan for their invaluable technical and analytical support and guidance on my research work.

I feel privileged and grateful to have Dr. Kartikeya Choudhary, Assistant Professor (Agronomy), MS Swaminathan School of Agriculture, Shoolini University, Solan, Himachal Pradesh for extending his expertise related to this thesis.

I would like to express my sincere gratitude to my parents (Dr. Arun Kumar Saha and Late Smt. Sikha Saha) for holding my hands from stepping into this world to what I'm today and infusing their values, integrity, empathy and honesty to me.

Finally, I am grateful and humbled by the co-operation and moral support to my elder sister (Dr. Anuradha Saha) and her husband (Dr. Vijay Bharti), my elder brother (Mr. Amit Kumar Saha) and his wife (Mrs. Rakhi Saha) my father-in-law (Sri Tapan Kumar Sutradhar), mother-in-law (Smt. Purabi Sarkar) husband (Mr. Tirthankar Sutradhar), my daughter (Tirthasha Sutradhar), sister-in-law (Smt. Tanushree Dutta), my nieces Ieshani Sharma, Kaniskha Sharma, Srija Dutta, Anushka Saha, nephews Tejash Sharma and Abhinava Saha. Without their tremendous understanding and encouragement in the past few years, it would be impossible for me to complete my research work.



(Anwesha Saha, Researcher)

Department of Geography & Applied Geography
University of North Bengal

PREFACE

This thesis entitled “Study of Women’s Participation in Agriculture and Allied Sectors in Koch Bihar District of West Bengal”, deals with farm women’s role in the growth and development of agriculture and allied sectors with their domestic duties. As a means of achieving the objectives of the study and to draw some meaningful conclusions, the study had been organized in eight chapters. In first chapter, Introduction, deals with objectives, review of literature, hypothesis, Methodology, origin and dimension of woman’s involvement in agriculture from pre historic to modern age etc. Second chapter explain the location and geo-environmental setting of the study area, that is, location, geology, relief, climate, drainage, soil, natural vegetation, groundwater, demographic characteristics, land use, agricultural technologies etc. Third chapter describe the overall socio-economic condition of Koch Bihar district and socio-economic status of women of this area. This chapter interpret the level of demographic condition, infrastructural condition, economic condition and overall socio-economic condition of Koch Bihar district. This chapter further delineate the total female worker in different blocks of Koch Bihar, occupation structure of female workers in different blocks of Koch Bihar, women involved in agriculture and allied activities out of total working population of Koch Bihar, Socio economic status of women respondents of Koch Bihar district such as status of farm women, age group, caste status, religion status, educational status, occupational status, annual income, annual expenditure, land holding of the family, farm power, irrigation sources, house types etc. Fourth chapter explicate the relationship between women’s participation in agriculture and allied sectors and their development. This chapter through light on female work participation rate in different blocks of Koch Bihar districts, distribution of female Main and Marginal workers, relationship between female literacy and work participation, participation of farm women in farm and livestock activities along with their domestic duties, agricultural knowledge & awareness of farm women etc. Chapter five spell out the involvement of farm women in decision making process in agriculture and allied sectors along with household activities. This chapter again clarify the point score scale analysis (Risk Preference, Scientific Orientation, Economic Motivation, Independence Scale, Management Orientation, Attitude towards Agriculture, Attitude towards Animal Rearing & Poultry) and index analysis (AII & DII), involvement in decision making of farm women in agricultural activities, family matters

and economic aspects. Chapter five again explain the descriptive distribution of the socio-economic attributes associated with women involved in agriculture, association of farm women's involvement in agricultural activity with their socio-economic attributes, association of farm women's involvement in decision making related to agricultural and allied activities with their socio-economic attributes. Chapter six account for the problems faced by farm women in the study area. This chapter again explain the farm women drudgery in agriculture. Chapter seven focus in findings, summary, recommendations and conclusion.

This thesis has wide future scope to improve the efficacy of farm women in all aspect of their life. The outcome of the study will be useful for the associated government departments and other agencies as farm women have the potentialities for improvement of socio-economic status through their participation in agriculture and allied fields. This work will very helpful for further research project also. This thesis conducted location-specific research which generates more concrete and detailed data which would be more effective and practical for developing new strategies for farm women.

LIST OF TABLES

Table No.	Descriptions	Page No.
1.1	Percentage of Female Main Workers to Total Female Population (1981 To 2011)	16
1.2	Total Workers in India - 2011 Census	17
1.3	Cultivators and Agricultural Labourers of Different Census Years of West Bengal and Koch Bihar	17
2.1	Mean Maximum Temperature (°C) of Koch Bihar District (2011-2020)	40
2.2	Mean Minimum Temperature (°C) of Koch Bihar District (2011-2020)	40
2.3	Monthly Rainfall (Mm) of Koch Bihar District (2011-2020)	41
2.4	Sex Wise Literacy Rate in Koch Bihar District, 2011	46
2.5	Religious Composition of Koch Bihar District, 2011	46
2.6	Caste Composition of Koch Bihar District, 2011	47
2.7	Agricultural Workers by Gender in Koch Bihar District, 2011	50
2.8	Distribution of Livestock and Poultry of Koch Bihar District, 2019	52
2.9	Number of Bank Offices and Co-Operatives of Koch Bihar District, 2011	55
3.1	Z Score Values of Demographic Indicators	60
3.2	Z Score Values for Infrastructural Indicators	62
3.3	Z-Score Values for Economic Indicators	64
3.4	Composite Score for Various Sectors	66
3.5	Level of Overall Socio-Economic Condition	67
3.6	Correlation Matrix	68
3.7	Total Female Worker in Different Blocks of Koch Bihar, 2011	69
3.8	Occupation Structure of Female Workers in Different Blocks of Koch Bihar, 2011	70
3.9	Women Involved in Agriculture and Allied Activities	71
3.10.1	Distribution of the Respondents according to the Selected Variables	73
3.10.2	Distribution of the Respondents according to the Selected Variables	74
4.1	Crude Female Work Participation Rate	90

4.2	Crude Female Work Participation Rate in 2001 & 2011	90
4.3	Gender Gap in Work Participation, 2001-2011	93
4.4	Women Work Participation of Rural Women by Caste in Koch Bihar District, 2011	94
4.5	Percentage of Rural Female Workers (Main and Marginal) to Total Population, in CD Blocks of Koch Bihar District	97
4.6	Category of Female Workers in Koch Bihar District, 2001-2011	98
4.7	Percentage of Female Workers (Main and Marginal) to Total Population, in CD Blocks of Koch Bihar District (2001 & 2011)	98
4.8	Female Literacy & Female Agricultural Workers in CD Blocks of Koch Bihar District, (2001 & 2011)	100
4.9	Percentage of Change of Female Literacy and Female Agricultural workers During 2001 to 2011 in CD Blocks of Koch Bihar District	101
4.10	Percentage of Female Literacy & Female Workers (Main and Marginal) to total Population, in CD Blocks of Koch Bihar District	103
4.11	Correlation Analysis between Female Literacy & Female Occupational Structure, 2011	104
4.12	Area under Principal Crops in the Koch Bihar District	105
4.13	Participation of Farm Women in Farm Activities	106
4.14	Participation of Farm Women in Livestock Activities	109
4.15	Participation of Farm Women in Domestic Activities	110
4.16	Score Obtained by Farm Women in Farm, Livestock and Household Activities in Koch Bihar District	112
4.17	Agricultural Knowledge & Awareness Test of Farm Women	114
4.18	Time Utilization Pattern of Farm Women	115
4.19	Gender Inequity in Wages / Day / Head	116
5.1	Risk Preference of Farm Women	127
5.2	Scientific Orientation of Farm Women	129
5.3	Economic Motivation of Farm Women	131
5.4	Independence Scale of Farm Women	133
5.5	Management Orientation of Farm Women	136

5.6	Attitude of Farm Women towards Agriculture	141
5.7	Attitude of Farm Women towards Animal Rearing & Poultry	145
5.8	Participation of Farm Women in Farm and Household Activities in Pundibari and Gosanimari Villages	151
5.9	Participation of Farm Women in Livestock Activities in Pundibari and Gosanimari Villages	152
5.10	Score Obtained by Farm Women in Farm, Livestock and Household Activities in Pundibari Village	152
5.11	Score Obtained by Farm Women in Farm, Livestock and Household Activities in Gosanimari Village	153
5.12	Participation of Farm Women in Decision-Making Processes in Pundibari and Gosanimari Villages	155
5.13	Score Obtained by Farm Women in Decision-Making Processes in Pundibari Village	156
5.14	Score Obtained by Farm Women in Decision-Making Processes in Gosanimari Village	156
5.15	Involvement in Decision-Making of Farm Women in Agricultural Activities	160
5.16	Involvement in Decision-Making of Farm Women in Family Matters	161
5.17	Involvement in Decision-Making of Women Respondents in Economic Aspects	162
5.18	Score Obtained by Farm Women in Decision-Making Processes in Koch Bihar District	163
5.19	Attributes of Women Involved in Agriculture in Koch Bihar District	164
5.20	Association of Farm Women's Involvement in Agricultural Activity with Socio-Economic Attributes	168
5.21	Association of Farm Women's Involvement in Decision Making related to Socio-Economic Attributes	173
6.1	Women Drudgery in Agriculture	183
6.2	Prioritisation of Problems Embedded with Women in Agriculture	185

LIST OF FIGURES

Figure No.	Descriptions	Page No.
1.1	Research Frame of the Research Work	21
2.1	Occupational Structure of Koch Bihar District, 2011	48
2.2	Occupational Structure of Female Marginal Workers of Koch Bihar, 2011	49
2.3	Occupational Structure of Female Main Workers of Koch Bihar District, 2011	49
3.1	Status of Farm Women	75
3.2	Age Group of Farm Women	75
3.3	Religion of Farm Women	76
3.4	Caste Composition of Farm Women	76
3.5	Educational Status of Farm Women	77
3.6	Family Types of Farm Women	78
3.7	Occupational Structure of Farm Women	78
3.8	Annual Income of Farm Women	79
3.9	Annual Expenditure of Farm Women	80
3.10	Land Holding of Farm Women's Family	80
3.11	Farm Power	81
3.12	Sources of Irrigation	82
3.13	House Types	82
4.1	Female Workers in Agricultural Sector (2001 & 2011) of Koch Bihar District	92
4.2	Female Literacy and Female Workers (Cultivators and Agricultural Labourers) in CD Blocks of Koch Bihar District (2001 & 2011)	102
4.3	Female Literacy and Female Workers (Main and Marginal) in Cd Blocks of Koch Bihar District (2001 & 2011)	103
4.4	Participation of Farm Women in Rice Production	107
4.5	Participation of Farm Women in Jute Production	107
4.6	Participation of Farm Women in Rice and Jute Production	108

4.7	Participation of Farm Women in Livestock Activities	110
4.8	Participation of Farm Women in Domestic Activities	111
4.9	Agricultural Knowledge & Awareness Test of Farm Women	115
4.10	Time Utilization Pattern of Respondents according to Hours / Day	116
5.1	Risk Preference of Farm Women in Koch Bihar District	128
5.2	Scientific Orientation of Farm Women in Koch Bihar District	130
5.3	Economic Motivation of Farm Women in Koch Bihar District	132
5.4	Independence Scale of Farm Women in Koch Bihar District	134
5.5	Planning Orientation of Farm Women in Koch Bihar District	137
5.6	Production Orientation of Farm Women in Koch Bihar District	138
5.7	Marketing Orientation of Farm Women in Koch Bihar District	139
5.8	Attitude of Farm Women towards Agriculture in Koch Bihar District	142
5.9	Attitude of Farm Women towards Agriculture in Koch Bihar District	143
5.10	Attitude of Farm Women towards Animal Rearing & Poultry in Koch Bihar District	146
5.11	Attitude of Farm Women towards Animal Rearing & Poultry in Koch Bihar District	147
5.12	Index Analysis of Farm Women in Koch Bihar District	159
5.13	Association of Farm Women's Involvement in Agricultural Activity with Socio-Economic Attributes	172
5.14	Association of Farm Women's Involvement in Decision Making with Socio-Economic Attributes	175

LIST OF MAPS

Map No.	Descriptions	Page No.
1.1	Sample Location in CD Blocks of Koch Bihar District	21
2.1	Location Map	37
2.2	Administrative Map of Koch Bihar District	38
2.3	Drainage Map of Koch Bihar District	42
2.4	Drainage Map of Koch Bihar District	42
2.5	Soil Map of Koch Bihar District	43
2.6	Hydrogeomorphology of Koch Bihar District	45
2.7	Landuse Landcover Map of Koch Bihar District	51
3.1	Block Wise Disparities in Demographic Condition of Koch Bihar District, 2011	61
3.2	Block Wise Disparities in Infrastructural Condition of Koch Bihar District, 2011	63
3.3	Block Wise Disparities in Economic Condition of Koch Bihar District, 2011	65
3.4	Block Wise Disparities in Overall Socio-Economic Condition of Koch Bihar District, 2011	67
3.5	Percentage of Female Working and Non-Working Population in CD Blocks of Koch Bihar District	69
3.6	Percentage of Female Main Worker and Marginal Worker in CD Blocks of Koch Bihar District	71
3.7	Women Involved in Agricultural and Allied Sector in CD Blocks of Koch Bihar District	72
4.1	Female Work Participation in CD Blocks of Koch Bihar District, 2001	91
4.2	Female Work Participation in CD Blocks of Koch Bihar District, 2011	92
4.3	Gender Gap in Work Participation in CD Blocks of Koch Bihar District, 2001-2011	94

4.4	Crude Work Participation among Rural SC Women in CD Blocks of Koch Bihar District (2001 & 2011)	95
4.5	Crude Work Participation among Rural ST Women in CD Blocks of Koch Bihar District (2001 & 2011)	96
4.6	Female Workers in Agricultural Sector in CD Blocks of Koch Bihar District (2001 & 2011)	99
5.1	Location of Pundibari and Gosanimari Village of Koch Bihar District	149

LIST OF PLATES

Plate No.	Descriptions	Page No.
4.1	Woman Preparing nursery bed for rice cultivation in their agricultural land at village Soulmari in Dinhata II block	117
4.2	Woman performing transplanting activities in wet field during rice cultivation at Putimari village in Coochbehar-I block	117
4.3	Woman moving with traditional plow to hand over to her male counterpart for ploughing at Shikarpur village in Mathabhanga I block	117
4.4	Farm woman performing winnowing activities before storing the rice for selling or own consumption at Kuchlibari in Mekhliganj block	117
4.5	Village woman during drying session of rice cultivation after threshing process at Patchhara village in Coochbehar-I block	117
4.6	Field survey during agricultural activities Putimari village in Coochbehar-I block	117
4.7	Villagers at Salmara in Coochbehar-II making cow dung to mitigate fuel need on kitchen. Though Pradhan Mantri Ujjwala Yojana' has ensured availability of clean fuel to the rural and deprived household but this village still using the traditional way of fuel	118
4.8	Milking is major part of allied field of agriculture which ensure milk consumption of family members and bring additional income to family. Picture taken at Natabari in Tufanganj-I	118
4.9	Woman collecting fodder to feed domestic animals at Falimari village in Tufanganj-II. This fodder generally collected from agricultural field then stored	118
4.10	A woman feeding her children during break time, this emphasis the commitment of farm woman in household activities along with farming. Picture taken at Petla in Dinhata-I block	118
4.11	Woman cleaning home after cooking and ensures cleanliness and arrangements of household at Sahebganj village in Dinhata-II block	118
4.12	Solid fuel biomass is the largest fuel resources in rural village despite of clean fuel availability. A woman trying to gather wood pieces to serve household needs after returning from field at Sajerpar Ghoramara village in Coochbehar-II block	118