

WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY

*Thesis submitted to the University of Kalyani for the Degree of
Doctor of Philosophy*

In

EDUCATION

By

Trishna Goswami (Kundu)

DEPARTMENT OF EDUCATION

University of Kalyani

Kalyani, Nadia

2015

Acknowledgement

It gives me immense pleasure to express my deepest and most heartfelt gratitude to Prof. Dibyendu Bhattacharyya, Professor, Department of Education, University of Kalyani, Kalyani, Nadia and Dr. Asit Kumar Das, Former Dean, Students' Welfare, University of Kalyani, Kalyani, Nadia for their unique and valuable guidance, enlightening discussion and minute supervision during various stages of the present research work,

I convey my regards to Prof. Dulal Mukhopadhyay, former Professor, Department of Education, University of Kalyani, Kalyani, Nadia, who not only introduced me to this research area, but always showed me the right way of placing the arguments.

I am grateful to Prof. Shreekanth Gour, Head, Department of Education, University of Kalyani, Kalyani, Nadia, and other Professors of this Department for their useful suggestions and incessant encouragement.

I extend my thanks to the staffs of different libraries, namely, Departmental Library, Central Library, University of Kalyani, the College Library in Shimurali Sachinandan College of Education, where I

work, the National Library, Kolkata for their active co-operation and help. A number of persons contributed to the successful completion of this work at different stages of investigation and field survey. They are greatly acknowledged.

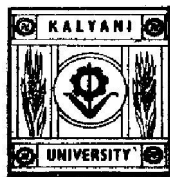
I sincerely acknowledge of indebtedness to my Principal, colleagues, friends and especially students of Shimurali Sachinandan College of Education for offering me opportunities to test my thoughts and ideas in different contexts and situations.

I acknowledge my debt to my family members also for their patient endurance of my active inactivity for a long period.

I extend my grateful thanks to all authors, editors and publishers from whose books and journals I have taken ideas and quotations to use in this work.

Finally I express my thanks to Impression Computer, Kalyani, Nadia for continuous assistance at various phases of the preparation of this thesis.

Trishna Goswami (Kundu)



University of Kalyani
Kalyani, Nadia

Prof. (Dr.) Dibyendu Bhattacharyya
Professor, Department of Education
University of Kalyani
Kalyani, Nadia.

Certificate

This is to certify that the research work entitled “WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY”, submitted by Smt. Trishna Goswami (Kundu) in fulfilment of the requirements for the award of Ph.D. degree in Education under the Department of Education, University of Kalyani is based on the results of an important research work accomplished by her. No part of this work has been submitted for any other degree. She has completed the research work under my guidance.

Dr. Dibyendu Bhattacharyya
Professor
Department of Education



Dr. Asit Kumar Das

Former Dean, Students' Welfare (M. Sc., B.Ed., Ph.D.)

University of Kalyani

Kalyani, Nadia, West Bengal- 741235

Website: www.klyuniv.ac.in

Residence

P-14, Regent Estate, Flat-3B

Kolkata 700092; Website: www.iisrr.in

(M) 09433082740; email: asitkd09@gmail.com

Certificate

This is to certify that the research work entitled “WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY”, submitted by Smt. Trishna Goswami (Kundu) in fulfilment of the requirements for the award of Ph.D. degree in Education under the Department of Education, University of Kalyani is based on the results of an important research work accomplished by her. No part of this work has been submitted for any other degree. She has completed the research work under my guidance.

Dr. Asit Kumar Das
Former Dean, Students' Welfare
University of Kalyani
Kalyani, Nadia

CONTENTS

	Page No.
Chapter- I INTRODUCTION	1-24
1.1 Origin of the Research Problem	1
1.2 Related Terms Defined	9
1.2.1 Environmental Management	9
1.2.2 Environmental Awareness	9
1.2.3 Eco-Friendliness	10
1.2.4 Animal Husbandry	10
1.2.5 Sanitation Practices	11
1.2.6 Health Consciousness	12
1.2.7 Solid Waste Management	12
1.2.8 Pollution	13
1.2.9 Household Management Capacity	14
1.2.10 Education	14
1.2.11 Empowerment	15
1.3 Objectives of the Study	15
1.4 Methodology	16
1.4.1 Method	16
1.4.2 Type of Research	16
1.4.3 Dimension	17
1.4.3.1 Awareness	18
1.4.3.2 Eco-Friendliness	18
1.4.3.3 Solid Waste Management	18
1.4.3.4 Effective Use of Natural Resources.	19
1.4.3.5 Policy Framing and Decision Making.	19
1.4.4 Population, Sampling and Representative Sample	19

1.4.4.1	Source	19
1.4.4.2	Sample size	20
1.5	Research Instruments	22
1.5.1	Tools and Techniques	22
1.6	Scope and Delimitation	24
1.6.1	Geographical Area	24
1.6.2	Women	24
Chapter – II IDENTIFICATION OF THE PROBLEM		25-56
2.1	Statement of the Problem	25
2.2	Emergence of the Problem	27
2.2.1	Women, Environmental Management and the Need of Education	27
2.2.2	Women and Environmental Sustainability	29
2.2.3	Environmental Management : A Concept	31
2.2.4	Environmental Education : A Concept	33
2.2.3.1	Deterministic Approach	34
2.2.3.2	Teleological Approach	34
2.2.3.3	Possibilistic Approach	34
2.2.3.4	Economic Deterministic Approach	35
2.2.3.5	Ecological Approach	35
2.3	Background of the Problem	35
2.3.1	International Efforts Towards Environmental Pollution Control	36
2.3.1.1	United Nation's Conferences on Human Environment, 1972	36
2.3.1.2	General Assembly's Resolution of December, 1972	36
2.3.1.3	Character of Economic Rights and Duties of States, 1974	37
2.3.1.4	UN-Habitat Conference on Human Settlement of 1976, World Water Conference of 1977 and other conference.	37
2.3.1.5	World Commission on Environment and Development	37
2.3.1.6	Earth Summit, 1992	38
2.3.1.7	Rio Declaration	38

2.3.1.8	Earth Summit, 1997	39
2.3.1.9	Kyoto Summit, 1997	39
2.3.1.10	Earth Summit, 2002	40
2.3.1.11	Copenhagen Earth Summit, 2009	40
2.3.1.12	Policy and Practice of MGDs (Millennium Development Goals) and UNICEF, 2010	41
2.3.1.13	Earth Summit, 2012	42
2.3.1.14	National Environmental Policy Act (NEPA), 2012	43
2.4	Constitutional Provision	43
2.4.1	Tiwari Committee on Environment, 1980	44
2.4.2	National Committee on Environment Planning, 1981	44
2.4.3	Environment Protection Enactments, 1981	45
2.4.4	Environment Protection Act, 1986	45
2.5	FIVE YEAR PLANS	45
2.5.1	Ninth Plan, 1997-2002	45
2.5.2	Tenth Plan, 2002-2007	46
2.5.3	Eleventh Plan, 2007-2012	46
2.5.4	12 th Five Year Plan, 2012-2017	47
2.6	Justification of the Problem	48
2.6.1	Beijing Declaration and Platform for Action (1995)	49
2.7	Significance of the Problem	52
2.8	Objectives of the Study	54
2.9	Statement of Hypotheses	55
Chapter III	REVIEW OF RELATED LITERATURE	57-116
3.1	Women and Environmental Awareness	58
3.1.1	Studies in Abroad	58
3.1.2	Studies in India	63
3.2	Women, Natural Greenery and Eco-friendly Activities	72
3.2.1	Studies in Abroad	73

3.2.2	Studies in India	78
3.3	Women and Water Resource Management	80
3.3.1	Studies in Abroad	81
3.4	Women and Waste Resource Management	82
3.4.1	Studies in Abroad	83
3.4.2	Studies in India	84
3.5	Women, Health, Sanitation and Nutrition	86
3.5.1	Studies in Abroad	87
3.5.2	Studies in India	91
3.6	Women and Environmental Pollution	96
3.6.1	Studies in Abroad	97
3.6.2	Studies in India	98
3.7	Women and Household Management	101
3.7.1	Studies in Abroad	101
3.7.2	Studies in India	103
3.8	Women and Animal Husbandry	105
3.8.1	Studies in Abroad	106
3.8.2	Studies in India	106
3.9	Women Empowerment and Environment	108
3.9.1	Studies in Abroad	108
3.10.	Modern Trends in Research Studies on Women and Environment in Today's Contemporary World	109
3.10.1	Chipko Movement	114
3.10.2	Appiko Movement	114
3.10.3	Narmada BachaoAndolon	114
3.10.4	Green Belt Movement	115
3.10.5	Navdanya Movement	115
3.10.6	Kenyan Land Takeover	115

Chapter-IV	METHODOLOGY AND DESIGN OF THE STUDY	117-132
4.1	Method	117
4.2	Type of Research	117
4.3	Dimension	117
4.4	Methods of Controlling Variables	118
4.5	Population, Sampling and Representative Sample	118
4.5.1	Source	118
4.5.2	Sampling Technique	118
4.5.3	Sample Characteristics	119
4.5.4	Sample Size	119
4.6	Research Instruments	121
4.6.1	Tools and Techniques	121
4.6.2	Construction of Tools	121
4.6.2.1	Step I	122
4.6.2.2	Step II	122
4.6.2.3	Step III	122
4.6.2.4	Step IV	122
4.6.2.5	Step V	122
4.7	Item Collection	123
4.8	Item Writing	123
4.8.1	Standardized Form of the Test	124
4.8.1.1	Scoring Key	124
4.9	Item Analysis	124
4.10	Reliability of the Test	127
4.11	Validity of the Test	131
Chapter – V	PROCEDURE FOR DATA COLLECTION AND ANALYSIS OF THE DATA	133-220
5.1	Introduction	133
5.2	Study Area	133

5.2.1	Area-wise Stratification	133
5.2.2	Area-wise Sample Distribution	134
5.2.3	Age-wise Stratification	134
5.2.4	Age-wise Sample Distribution	134
5.3	Administration of Tools and Collection of Data	135
5.4	Scope and Delimitation	135
5.4.1	Geographical Area	136
5.4.2	Women	136
5.4.3	Dimension	136
5.5	Analysis of the Collected & Processed Data	136
5.6	Scoring and Interpretation of the Data	137
5.7	The Empirical Evidence and Findings	138
5.7.1	District Nadia : Statistical Report	138
5.7.1.1	Geographical Area (square kilometres)	139
5.7.1.2	Administrative Section	139
5.7.1.3	Population and Population Density (per square kilometres)	139
5.7.1.4	Population According to Village and Town Areas	139
5.7.1.5	Population According to Sex	140
5.7.1.6	SC and ST Population, 2001	140
5.7.1.7	Literary Rate	140
5.7.1.8	Literacy Rate on Total Population in Nadia District	140
5.7.1.9	Literate and Illiterates by Sex (Total Population) in Ranaghat Block 2	141
5.7.1.10	Scheduled Castes Literate and Illiterates by Sex	141
5.7.1.11	Scheduled Tribes Literate and Illiterates by Sex	142
5.7.1.12	Literate and Illiterates by Sex (Total Population) in Chakdaha Block	142
5.7.1.13	Scheduled Castes Literate and Illiterates by Sex	143
5.7.1.14	Scheduled Tribes Literate and Illiterates by Sex	143

5.7.1.15	Literate and Illiterates by Sex (Total Population) in Haringhata Block	144
5.7.1.16	Scheduled Castes Literate and Illiterates by Sex	144
5.7.1.17	Scheduled Tribes Literate and Illiterates by Sex	144
5.7.1.18	Literate and Illiterates by Sex (Total Population) in Nabadwip Block	145
5.7.1.19	Scheduled Castes Literate and Illiterates by Sex	145
5.7.1.20	Scheduled Tribes Literate and Illiterates by Sex	145
5.7.2	Educational Status	146
5.7.2.1	Status of Education of the Selected Women Villagers (in Percentage)	146
5.7.2.2.	Status of Education of the Selected Women in Service (in Percentage)	147
5.7.2.2.1	Distribution of Workers : Ranaghat Block-2	149
5.7.2.2.2	Distribution of Workers : Chakdaha Block	149
5.7.2.2.3	Distribution of Workers : Haringhata Block	150
5.7.2.2.4	Distribution of Workers : Nabadwip Block	150
5.7.2.3	Case Studies	151
5.7.2.3.1	Case Study –1	151
5.7.2.3.2	Case Study –2	151
5.7.2.3.3	Case Study : Interpretation	152
5.8	Descriptive Statistics of Different Groups	153
5.9	Testing of the Hypotheses	158
5.7	Graphical Presentation and Interpretation	171
Chapter- VI	FINDINGS AND CONCLUSION	221-246
6.1	Summary of Findings and Concluding Observation	221
6.2	Findings	222
6.2.1	Findings from Hypotheses Testing	222
6.2.2	General Findings	224
6.2.3	Findings from Graphical Analysis	226

6.3	Conclusion	230
6.3.1	The Strength of Women must be Built	235
6.3.2	The Recourses and Benefits must be Distributed Equally among Women	235
6.3.3	Holistic Approach should be Adopted	236
6.3.4	Equipping Women with Adequate Natural Resources and Other Assets	236
6.3.5	The Self-Help Group of Women must be Entrusted with Funds and Resources	237
6.3.6	Rights-Based Approach should be Developed in Planning	237
6.3.7	Isolated Successes must be Sealed up	237
6.3.8	Different Kinds of Hobbies Especially Gardening should be Developed	238
6.3.9	Garbage Boxes such as Dustbins should be Used	238
6.3.10	Non-Conventional Sources of Energy should be Used	239
6.3.11	The Cultural Norms of a Small Family should be Adopted	239
6.3.12	Minimum Use of Electricity should be Practised	240
6.3.13	Good Habits should be Developed among Children	240
6.3.14	Avocation for Farming should be Developed among New Generations	241
6.3.15	Women should be Enriched with Traditional Knowledge	241
6.3.16	Engaging Women for Sustainable Development	243
6.3.17	Create an Enabling Environment	243
6.3.18	A Safe and Healthy Environment for Women	243
6.3.19	A Life Course Approach to Social Security and Support	244
6.4	Limitations of the Study	244
6.5	Suggestions for Further Research	245
REFERENCES		i-xxiii
APPENDICES		I-XXXI
Appendix – I		I
Appendix – II		V
Appendix – III		IX
Appendix – IV		XVIII
Appendix – V		XXV

LIST OF TABLES

Table 1.1. Distribution of samples in different categories according to geographical location	20
Table 1.2. Area-wise Sample Distribution	21
Table 1.3. Age-wise Sample Distribution	21
Table 4.1. Scoring Key	124
Table 4.2. ‘t’ Test for Item Analysis	125
Table 4.3. Reliability Analysis-Scale [Cronbach’s alpha (α)]	129
Table 4.4. Summary Item Statistics	129
Table 4.5. Inter-Item Correlation Matrix	129
Table 4.6. Item-Total Statistics	130
Table 5.1. Descriptive statistics of data between rural students age upto 25 and rural students age above 25.	154
Table 5.2. Descriptive statistics of data between rural housewives age upto 25 and rural housewives age above 25.	154
Table 5.3. Descriptive statistics of data between rural policy makers and service holders age upto 25 and rural policy makers and service holders age above 25.	155
Table 5.4. Descriptive statistics of data between urban students age upto 25 and urban students age above 25.	155
Table 5.5. Descriptive statistics of data between urban housewives age upto 25 and urban housewives age above 25.	155
Table 5.6. Descriptive statistics of data between urban policy makers and service holders age upto 25 and urban policy makers and service holders age above 25.	156
Table 5.7. Descriptive statistics of data between rural students age upto 25 and urban students age upto 25.	156
Table 5.8. Descriptive statistics of data between rural students age above 25 and urban students age above 25.	156
Table 5.9. Descriptive statistics of data between rural housewives age upto 25 and urban housewives age upto 25.	157
Table 5.10. Descriptive statistics of data between rural housewives age upto 25 and urban housewives age upto 25.	157

Table 5.11. Descriptive statistics of data between rural policy makers and service holders age upto 25 and urban policy makers and service holders age upto 25.	157
---	-----

Table 5.12. Descriptive statistics of data between rural policy makers and service holders age upto 25 and urban policy makers and service holders age upto 25.	158
---	-----

Tables of ‘t’ values

Table 1. ‘t’ value of Rural Student between age group up to 25 and above 25 with respect to participation in environmental management	159
---	-----

Table 2. ‘t’ value of Rural Housewives between age group up to 25 and above 25 with respect to participation in environmental management	160
--	-----

Table 3. ‘t’ value of Rural Policy Makers and Service Holders between age group up to 25 and above 25 with respect to participation in environmental management	161
---	-----

Table 4. ‘t’ value of Urban Students between age group up to 25 and above 25 with respect to participation in environmental management	162
--	-----

Table 5. ‘t’ value of Urban Housewives between age group up to 25 and above 25 with respect to participation in environmental management	163
--	-----

Table 6. ‘t’ value of Urban Policy Makers and Service Holders between age group up to 25 and above 25 with respect to participation in environmental management	164
---	-----

Table 7. ‘t’ value of age up to 25 between Rural and Urban Students with respect to participation in environmental management	165
---	-----

Table 8. ‘t’ value of age up to 25 between Rural and Urban Housewives with respect to participation in environmental management	166
---	-----

Table 9. ‘t’ value of age up to 25 between Rural Policy Makers and Service Holders and Urban Policy Maker and Service Holder with respect to participation in environmental management	167
--	-----

Table 10. ‘t’ value of age above 25 between Rural Students and Urban Students with respect to participation in environmental management	168
---	-----

Table 11. ‘t’ value of age above 25 between Rural Housewives and Urban Housewives with respect to participation in environmental management	169
---	-----

Table 12. ‘t’ value of age above 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service Holders in environmental management	170
---	-----

LIST OF DIAGRAM & FIGURES

Diagram 1.1. Area-wise Stratification	20
Diagram 1.2. Age-wise Stratification	21
Fig. 5.1 : Graphical presentation of the status of education of the selected women villagers (in percentage)	146
Fig. 5.2 : Graphical presentation of the status of education of the selected women in service (in percentage)	147
Fig. 1: Environmental Management Graph for Item No. 1 : The natural elements (tree, water, soil, air, etc.) are necessary for our living directly or indirectly	171
Fig. 2: Environmental Management Graph for Item No. 2 : If the numbers of trees are reduced, it is difficult for us to live	172
Fig. 3: Environmental Management Graph for Item No. 3 : The amount of rainfall will lessen if the numbers of trees are reduced	173
Fig. 4: Environmental Management Graph for Item No. 4 : You will plant new trees, if you are compelled to cut old ones	174
Fig. 5: Environmental Management Graph for Item No. 5 : There is no harm in washing clothes in pond	175
Fig. 6: Environmental Management Graph for Item No. 6 : The use of bio-fertilizer in cultivation does not pollute but enhances fertility	176
Fig. 7: Environmental Management Graph for Item No. 7 : If we visit any natural place or sanctuary, we should abide by the rules	177
Fig. 8: Environmental Management Graph for Item No. 8 : We can bathe well if there is a clean pond beside our house	178
Fig. 9: Environmental Management Graph for Item No. 9 : You dispose the garbage of your house in adjacent road or pond	179
Fig. 10 : Environmental Management Graph for Item No. 10 : We should drink purified water	180
Fig. 11: Environmental Management Graph for Item No. 11 : New houses made of bricks are essential to decorate the environment	181

Fig. 12:	Environmental Management Graph for Item No. 12 : We have nothing to do if a tree dies	182
Fig. 13 :	Environmental Management Graph for Item No. 13 : You use bamboo or cane basket to keep fruits	183
Fig. 14:	Environmental Management Graph for Item No. 14 : You use plastic mat to sleep on floor	184
Fig. 15:	Environmental Management Graph for Item No. 15 : You use fashionable thermocol dishes in household occasions	185
Fig. 16:	Environmental Management Graph for Item No. 16 : You like plastic bags for shopping	186
Fig. 17:	Environmental Management Graph for Item No. 17 : To use gas instead of bio-fuel as coal, wood comparatively pollute nature less	187
Fig. 18:	Environmental Management Graph for Item No. 18 : You like to plant flowers and fruit trees in vacant places of house	188
Fig. 19:	Environmental Management Graph for Item No. 19 : You like to plant flowers and fruit trees in vacant places of your workplace	189
Fig. 20:	Environmental Management Graph for Item No. 20 : Each member of our family takes care of your gardening of flowers as well as vegetables	190
Fig. 21:	Environmental Management Graph for Item No. 21 : Cooking is impossible without earthen pots	191
Fig. 22:	Environmental Management Graph for Item No. 22 : The presentation papers should be disposed than to preserve	192
Fig. 23:	Environmental Management Graph for Item No. 23 : Plastic bags should be banned	193
Fig. 24:	Environmental Management Graph for Item No. 24 : We can dump garbage anywhere	194
Fig. 25:	Environmental Management Graph for Item No. 25 : You have domestic animals	195
Fig. 26:	Environmental Management Graph for Item No. 26 : If the domestic animals are affected by diseases, they should be sold	196

Fig. 27:	Environmental Management Graph for Item No. 27 : Cooking fuels may be collected from trees from surroundings	197
Fig. 28:	Environmental Management Graph for Item No. 28 : There is no problem in spitting anywhere	198
Fig. 29:	Environmental Management Graph for Item No. 29 : Your opinion has no value regarding the purchase of household products like food, utensils, dresses etc.	199
Fig. 30:	Environmental Management Graph for Item No. 30 : A woman will decide herself the number of children	200
Fig. 31:	Environmental Management Graph for Item No. 31 : Both the male and female member can manage the economic sector of the family	201
Fig. 32:	Environmental Management Graph for Item No. 32 : You express your opinion freely regarding family matters	202
Fig. 33:	Environmental Management Graph for Item No. 33 : When anyone in the family is ill, you bring medicine from shop without consulting doctors	203
Fig. 34:	Environmental Management Graph for Item No. 34 : Vaccination is of no value to protect child's health	204
Fig. 35:	Environmental Management Graph for Item No. 35 : Aids is transmitted by touch	205
Fig. 36:	Environmental Management Graph for Item No. 36 : We do not need any proper place for sanitation	206
Fig. 37:	Environmental Management Graph for Item No. 37 : You like a seasonal fruit daily in your diet	207
Fig. 38:	Environmental Management Graph for Item No. 38 : We do not need to wash hands before eating	208
Fig. 39:	Environmental Management Graph for Item No. 39 : To use the water of pond for cooking is good for health	209
Fig. 40:	Environmental Management Graph for Item No. 40 : It is essential to brush our teeth at night than morning	210
Fig. 41:	Environmental Management Graph for Item No. 41 : Drinking water should be stored well in plastic bottles rather than earthen pots	211
Fig. 42:	Environmental Management Graph for Item No. 42 : Breast milk is primary food for building a child's health	212

Fig. 43:	Environmental Management Graph for Item No. 43 : It is better to make the arrangement of delivering of a pregnant mother to hospital than houses	213
Fig. 44:	Environmental Management Graph for Item No. 44 : Use excess of water during bathing or washing clothes is essential	214
Fig. 45:	Environmental Management Graph for Item No. 45 : We can do nothing wastage of water from tap	215
Fig. 46:	Environmental Management Graph for Item No. 46 : The number of trees is reduced in last ten years	216
Fig. 47:	Environmental Management Graph for Item No. 47 : There is no substitute for plastic bags	217
Fig. 48:	Environmental Management Graph for Item No. 48 : Green vegetables contain more vitamins	218
Fig. 49:	Environmental Management Graph for Item No. 49 : Education not only creates scope for employment but also teaches how to keep environment clean	219
Fig. 50:	Environmental Management Graph for Item No. 50 : The first step to be independent is to respect oneself	220
Diagram 6.1	Interaction of Women with Society in Environmental Management	242

LIST OF PICTURES

- Picture 1. A Woman in Rowtari Block is Preparing her Kitchen Garden.
- Picture 2. A Village Woman in Fatepur Block is Engaging Herself in Animal Husbandry.
- Picture 3. A Village Woman in Chapra Block is Collecting Water from Pond for Household Use.
- Picture 4. A Village Woman in Nokari, Ranaghat Block is Collecting Fuel for Household.
- Picture 5. Water is Being Polluted by Day to Day Use of Local People in Chakdaha Municipality Area.
- Picture 6. An Urban Women in Ranaghat Municipality Area is Earning for Livelihood by Bidi Binding.
- Picture 7. An Urban Women in Nabadwip Municipality Area is Earning for Livelihood by Weaving.
- Picture 8. Solid Wastes are Being Collected by Female Children in Kalyani Municipality.
- Picture 9. Urban Female Children are Earning for Their Livelihood on Open Street in Ranaghat Municipality.
- Picture 10. Water is Being Contaminated by Solid Wastes Even in Rural Areas in Rowtari Gram Panchayet.

Chapter- I

INTRODUCTION

1.1 Origin of the Research Problem

Environmentalism in recent years has become a dominant discourse. The various fields of this discipline collectively promote a number of issues regarding environment and development. Development requires an understanding and control over human relationship with nature, otherwisely known as environmental management. Such management becomes meaningful only when women contribute and are allowed to contribute their full participation in the field. Development has fortunately given way to sustainable development, and growth has given way to 'green growth'. In India, as elsewhere, social science research has been closely linked to the rise and maturity of the environmental movement. After the Independence, there began an age of ecological innocence, when the urge to industrialise and 'catch up' with the developed world relegated environmental concern to the background. Now-a-days, the concern for maintaining ecological balance emerged in the form of vocal and articulate social movement.

Governments the world over are now speculating the global dimension of a number of environmental problems, such as climate change, ozone depletion, dumping of hazardous wastes, destruction of biological resources and of forests' environmental management programmes.

The situation has become bad to worse. Now it is high time for taking appropriate measures to solve environmental problems. A lot of studies on women

and environment have shown that women are significant actors in natural resource management and they are also major contributors to environment rehabilitation and conservation. Women's direct contact with the environment has produced their deep knowledge about the environment.

Women through their roles as farmers and as collectors of water and firewood have a close connection with their local environment. They often suffer most directly from environmental problems. Thus women have served as agriculturists, water-resource-managers, responsible domestic and household managers, health planners, forest managers etc.

So, involving women in protecting the environment would help societies to develop a sense of responsibility. And it is needed to maintain a good balance between human and nature and natural resources. Women view environment as the life support systems of humanity. It is the source of all life, that people are dependent on the environment. Without good environment our life would not be peaceful and healthy. Women's commitment and dedication to work is a manifestation of their selfless love and concern for the environment; for their children and for the future generation.

In the era of globalisation, industrialisation and e-communication and rapid changing scenario, India has emerged as the most intricate and one of the largest democratic country in all over the world. This is true, especially, in today's context, where the world is a global village, where territorial boundaries are in a state of constant flux, where new challenges and new connections are waiting to be discovered. Men and women have done both whatever good in this universe. Over

the past few decades women have contributed significantly to life and society by interrogating and exploring their own lives and that of other women. Today's Indian women deal with multiple issues concerning self and society. Women had for long been denied access to education, equal rights, right to work and the freedom to choose.

But in our societies the role of women outside the family has never been accepted in the same manner as it is in case of male. Before two decades, barring a handful of exceptions the Indian women were not ready to penetrate and participate meaningfully in any socio-political decision making mechanism. Moreover the rigorous traditional values also confine women within the frontiers of family. Consequently, women are constrained to take the task of their distinctiveness in Society. Findings of several studies in women indicate that a vast majority of, if not most of them are not properly aware of their role and right in the society and they prefer to remain at the periphery of the socio-political power. The United Nations after declaring 1975-1985 as the decade for women's development observed that women performed two third of world's work but receive only ten percent of the world's income and only one percent of the means of production. Both inside and outside the households women are excluded from positions of power. They are denied opportunities to participate in the decision making process. Women's education and participation thus are essentially vital issues to rectify this imbalance and gender inequity. Active participation in social economic and political sphere would help in enhancing the process of environmental management.

The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The

constitution not only grants equality to women but also empowers the state to adopt measures of positive discrimination in favour of women.

Within the framework of a democratic polity, our laws, development policies, plans and programs have aimed at women's advancement in different spheres. From the Fifth Five year plan (1974-78) onwards has been a marked shift in the approach to women's issues from welfare to development. In the recent years, the development of women has been recognised as the central issue in determining the status of women. The National Commission for Women was set up by an act of Parliament in 1990 to safeguard the rights and legal entitlements of women. The 73rd and 74th Amendments (1993) to the Constitution of India have provided for reservation of seats in the local bodies of Panchayats and Municipalities for women laying a strong foundation for their participation in decision making at the local levels.

According to the Constitution of India, all people are source of sovereign power, laws and authority. They are expected to share in power. Sharing in power and decision making by the people is the essence of real democracy. All sections of her people are unable to exercise influence the course of the making of law, administration of authority, or distribution of the national cake. It may be either due to poverty or social stratification or physical coercion yielded by powerful sections of Indian Society. Democracy has no meaning for them, when a part of people is made to suffer from social discrepancies. Since Independence the Indian Government has been devoting their special attention to uplift the especially weaker sections of the Indian Society and, therefore, through planned action a number of welfare schemes and programmes have been adopted for betterment of women. After

independence Government as well as voluntary organisations are right in paying special attention to education as a key factor for social, economic, political and environmental change for of women. Like many other countries of the world, India adopted western model of democracy without having socio-economic and cultural conditions conducive to its growth and working, India has declared her goals of polity in the preamble of her constitution: Justice, Equality, Liberty, and Fraternity.

More than 70% of the Indian population is rural based (Akwa, L., 2009). Biomass plays a crucial role in meeting daily survival needs of the vast majority of rural households. Water is essential for survival and its availability is related to biomass. The biomass based subsistence economy is mostly non-magnetised. Production and processing of bio-mass as raw materials, are also the biggest sources of employment. Development imperatives have inevitably led to some destruction of the biomass through deforestation and environmental degradation.

India has been agrarian country. Women constitute about 60% of the agricultural work force (Akwa, L., 2009). About 48% self employed farmers are women and 64% of the informal sector work force depending on agriculture is women (Akwa, L., 2009). The plight of most rural women has been pathetic since they have to collect firewood, fetch drinking water, search fodder to feed cattle, work on their meagre land to raise crops, works as labour on other farms, take care of children. According to World Bank study (Akwa, L., 2009), lack of toilets and other proper sanitation facilities cost India nearly \$54 billion a year through hygiene-related illness, lost productivity and other factors steaming from poor sanitation facilities. As far as scenario of rural sanitation is concerned, the access to water supply and sanitation services is still largely inadequate. In various studies it is

indicated that is absence of a sanitary latrine at home, it is the women's dignity which is found to be stake especially in rural India. To ensure the success and sustainability of any sanitation programme women must be given enough space and opportunity to take active part in it. Women have always been a better manager in comparison to their male counterpart in the context promoting the state of household level sanitation.

Traditionally, women have been responsible for subsistence and survival for water, food, fuel, fodder and habitat, though they rarely get the credit for nurturing these life support systems, added to this environmental destruction, accelerates women's problems in a way very difficult from that of men. The challenge is to re-establish the symbiosis between communities, women and natural resources and reverse the trend of negative impact of existing developmental paradigms.

Environment is composed of material and non-material entities. Under the non-material entities there come social and environmental norms, individual and social freedom, value system, ethical and humanity aspects, human relations, attitude towards life, society, nature, environment, etc. Human being rules society, nature and environment; but their ideology guides them in all thoughts and actions. The mental environment guides the physical environment surrounding us. So, it is the right type of ideology, which is responsible for the expected type of environment. Environmental sustainability means to meet the environmental needs of the present without compromising the needs of future. This attitude needs to be inculcated among the learner i.e. the members of the society as well as environment. Woman (mother) is the first teacher to every child. God has bestowed them with some special

type of child nurture qualities, such as softness, loveliness, affection, humanity, compassion, empathy, etc. They only can compensate the defects in child's education system and help in inculcating right type of attitude and ideology among their children from the very beginning of their life. Hence, mothers need to devote more time with their children – so that attitude and ideology, congenial for environmental sustainability is inculcated among all and a better living environment has become a reality in future.

The UN Report on women observes that the women are weighed down with responsibility, while the 'men' rides high with power. It is a general notion of all societies that women must do all domestic work, and men should earn wages for families. As a result, until today, maximum share of the world's wealth is on men's side, while most of the work is on women's side. If we go through the reports of employment, we can find that the participation of women is inadequate in the field of employment and that women's earning is less than half of the earning of men.

The advancement of women through the participation in socio-politics began to assume importance only in the twentyfirst century. The global concern for women's participation was noticed in 1975 when the United Nations declared the decade as the 'women Development Decade' and adopted some resolutions for it. This was followed by the Nairobi Conference (1985) which called on the participating countries to take steps for ensuring women's participation in politics through reservation of the 35 percent seats in elections. In the developing countries women continue to face a variety of cultural, institutional, religious and legal constraints that circumscribe their involvement in their respective societies and limit their advancement and participation in social and environmental activities.

It is very important to note that the progress of women advancement through Panchayets would largely depend on the breaking of the hegemony of rural rich over villagers, or, so to say, of feudalism. This is a challenge to women. Women advancement through Panchayet requires to be supported by a sustained campaign and vigorous efforts for creating awareness about rights and duties of women. It can not be achieved until and unless centre percent literacy of women is assured.

Education, obviously a powerful vehicle for bringing about changes, a panacea of all evils and potent weapons for prevention plays a central role in the society. The role of the education in traditional societies was largely confined to cultural accomplishment. In the content of development of modern science and technology, which are being used as tools of qualitative change in human lives, education has come to be acknowledged as a tool to human development and advancement.

In the context of transformation of a traditional society into a global era, the centre of authority shifts from the known information system to well to do habits, which are supposedly based on the principles of equity and justice. Education in the real sense can enhance all those capacities of women in the district, namely Nadia. Keeping the above discussion in the view the study has been conducted on the participation of women in environmental management in the district, Nadia.

1.2 Related Terms Defined

1.2.1 Environmental Management

According to Leopold Aldo (1949) “Environmental Management is the practice of creating the harmony between the living and non-living components – all the components of nature”.

Karpoff, Jonathan M. (1993) has defined “Environmental Management is as a strategy to balance growth with environmental protection, reducing pollution, waste, consumption of natural resources”.

Environmental Management is an attempt to control human impact on and interaction with the environment in order to preserve natural resources.

Environmental Management is a purposeful activity with the goal to maintain and improve the state of an environmental resource affected by human activities (<http://dictionary.reference.com/>).

Environmental Management can be defined as “the management of the interaction and impact of human activities on the natural environment”. (<http://westcoastdm.co.za/about/environmental-management/>)

1.2.2 Environmental Awareness

The word awareness acquires different meanings in different socio-cultural and political contexts. The concept of self-strength, control, self-power, self-reliance, own choice, life of dignity in accordance with ones values, independence, own decision making, awakening, capability are embedded in the generalized idea of awareness. Awareness is of intrinsic value but it also has instrumental value. In the

broadest sense awareness is the expansion of freedom of choice and action. It means increasing ones authority and control over the resources and decisions that affect ones life.

Environmental awareness is an awareness and subsequent desire to preserve natural resources and the environment. The preservation of the environment and a responsible attitude in the use of natural resources are decisive factors that allow humans to coexist with nature and biodiversity. (<http://www.neyahotels.com/en/consciencia-ambiental.html>)

1.2.3 Eco-Friendliness

Eco-friendly literally means earth-friendly or not harmful to the environment. This term most commonly refers to products that contribute to green living or practices that help conserve resources like water and energy (<http://homeguides.sfgate.com/ecofriendly-mean-78718.html>).

The term is used only to highlight the fact that women should be involved and their perspectives must be reflected in the policies and programmes for environment, conservation and restoration. Considering the impact of environmental factors on their livelihood, women's participation must be ensured in the conservation of the environment and control of environmental degradation.

1.2.4 Animal Husbandry

According to the American Heritage Science Dictionary (2002), "Animal Husbandry is the branch of agriculture concerned with the care and breeding of domestic animals such as cattle, dogs, sheep, and horses".

Animal husbandry is the science of looking after and breeding animals — specifically those that are used in agriculture, to provide products, for research purposes or as domestic pets. The subject covers a wide range of activities, including care and grooming, livestock farming, accommodation and hygiene. The study also overlaps with many other disciplines, such as agriculture, veterinary science and genetics. Not all people involved in husbandry will necessarily take part in all these activities or require knowledge of other disciplines. In many parts of the world, people are essentially practising animal husbandry though being farmers, ranchers, shepherders, or simply taking care of large groups of livestock. (<http://www.wisegeek.com/what-is-animal-husbandry.htm>)

The term is associated with the on-farm conservation tradition of rural and tribal women with reference to agro-biodiversity. Traditionally, women have dealt the non-monetized bio-mass based subsistence economy of the household i.e. firewood, cow dung, crop-wastes, organic manure, fodder etc.

1.2.5 Sanitation Practices

The World Health Organization (2009) states that:

"Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and feces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal."

("Sanitation".*Health topics*.World Health Organization.)

Special attention are to be given to the needs of women in the provision of safe drinking water, sewage disposal, toilet facilities and sanitation within accessible reach of households, especially in rural areas and urban slums. Women's participation must be ensured in the planning, execution and maintenance of such services.

1.2.6 Health Consciousness

Health consciousness is describing an attitude in which one has an awareness of the healthiness of one's diet and life-style. The term lays stress on the high risk of malnutrition and disease that women face at all three critical stages viz. infancy and childhood, adolescent and reproductive phase. Intra-household discrimination in nutritional matters vis-a-vis girls and women are to be sought to be ended through appropriate strategies. And it is women who can do this.

1.2.7 Solid Waste Management

Solid-waste management is the collecting, treating, and disposing of solid material that is discarded because it has served its purpose or is no longer useful. Improper disposal of municipal solid waste can create unsanitary conditions, and these conditions in turn can lead to pollution of the environment and to outbreaks of vector-borne disease—that is, diseases spread by rodents and insects. The tasks of solid-waste management present complex technical challenges. They also pose a wide variety of administrative, economic, and social problems that must be managed and solved. (<http://www.britannica.com/EBchecked/topic/553362/solid-waste-management>)

Solid waste management is a polite term for garbage management. As long as humans have been living in settled communities, solid waste, or garbage, has been an issue, and modern societies generate far more solid waste than early humans ever did. Daily life in industrialized nations can generate several pounds (kilograms) of solid waste per consumer, not only directly in the home, but indirectly in factories that manufacture goods purchased by consumers. Solid waste management is a system for handling all of this garbage, and includes municipal waste collection, recycling programs, dumps, and incinerators.(<http://www.wisegeek.org>)

Solid waste management (SWM) may be defined as the generation, collection, transfer and transport, processing and disposal of waste. It is also responsive to principles of health, economic, engineering, conservation, aesthetics environmental consideration and public attitudes. The solution of solid waste management may involve in different fields such as city and regional planning, geography, economic, public health, sociology as well as engineering and material science.

1.2.8 Pollution

According to The American Heritage Science Dictionary (2002) “Pollution is the contamination of air, water or soil by substances that are harmful to living organisms.”

Pollution is the action of polluting especially by environmental contamination with man-made waste; also the condition of being polluted (www.merriam-webster.com/dictionary).

Pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat and light. Pollutants, the components of pollution, can be either foreign substances or naturally occurring contaminants. Three factors determine the severity of a pollutant, its chemical nature, the concentration and the persistence. It is women who are really the victim of pollution. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the spilling of oil or disposal of industrial waste.

1.2.9 Household Management Capacity

The term ‘household management capacity’ here needs attention to the quality of a woman to provide adequate capacity to make control and manage over the family and family-related issues and matters.

1.2.10 Education

Dr. Radhakrishnan says, "Education, to be complete must be humane, it must include not only the training of the intellect but the refinement of the heart and the discipline of the spirit." (Mukherjee, K. K., 1972).

Tagore thinks, "Education means enabling the mind to find out the ultimate truth which emancipates us from the bondage of the dust." (Mukherjee, K. K., 1972).

Aristotle speaks of Education as, "the certain of a sound mind in a sound body." (Chaube, S. P., 2009).

1.2.11 Empowerment

According to Indiresan, Jaya (2002) “Empowerment is a process which helps people to gain control of their lives through raising their awareness and helping them to take action and work. In other words, empowerment facilitates change and enables a person to do what he or she wants. Empowerment is the feeling that activates one’s psychological energy to accomplish one’s goals.”

The word empowerment acquires different meanings in different socio-cultural and political contexts. The concept of self-strength, control, self-power, self-reliance, own choice, life of dignity in accordance with ones values, independence, own decision making, awakening, capability are embedded in the generalised idea of empowerment. Empowerment is of intrinsic value but it also has instrumental value. In the broadest sense empowerment is the expansion of freedom of choice and action. It means increasing ones authority and control over the resources and decisions that affect ones life.

1.3 Objectives of the Study

- (i) To study the environmental awareness of women to manage the environment.
- (ii) To find out the participation of women in various environment-related activities to manage and protect the environment.
- (iii) To study the participation of women in policy framing and decision making related to environmental issues for maintaining the environmental balance.

- (iv) To find out the scope of common women participation in different day to day activities related to environmental protection on various fields, like health and nutrition, child care and rearing, afforestation etc.
- (v) To find out women participation in proper and effective use of nature and natural resources to reduce environmental pollution.
- (vi) To explore whether women having better skills in environmental management can reach empowerment.

1.4 Methodology

The study has been conducted with a view to women and their participation in environmental management in the District of Nadia in West Bengal. To conduct this study a systematic plan has been developed by the researcher.

1.4.1 Method

The present study has been carried out through descriptive survey method. The details regarding sample, tools, procedure of data collection are reported under:

1.4.2 Type of Research

The type of research is Descriptive Survey type.

“A descriptive study”, according to Best and Khan (2011, tenth ed.) “describes and interprets what it is.” It is concerned with conditions or relationships that exist, opinions that are held, processes that are going on, effects that are evident,

or trends that are developing. It is primarily concerned with the present, although it often considers past events and influences as they relate to current conditions.”

Descriptive research deals with the relationships between variables, the testing of hypothesis and the development of generalizations, principles or theories that have universal validity. The descriptive survey method gathers data from a relatively large number of cases at a particular time. It is not concerned with the statistics that result when data are abstracted from a number of individual cases. In analysing political, social or economic conditions, one of the first steps is to get the facts about the situation or a picture of conditions that prevail or that are developing. These data may be gathered from surveys of the entire population. Others are inferred from a study of a sample group carefully selected from the total population. At times the survey may describe a limited population that is the only group under consideration.

So, descriptive survey research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and whenever possible to draw valid general conclusions from the facts discovered. As the researcher has desired to find information concerning the current phenomena and to describe and interpret the present status of women participation in environmental management, the researcher has adopted the descriptive survey type research.

1.4.3 Dimension

The study has been based upon five dimensions. These five dimensions covered the major aspects of participation in Environmental Management. The dimensions are as follows: -

1.4.3.1 Awareness

Environmental awareness is to understand the fragility of our environment and the importance of its protection. Relationship between human beings especially the women and the environment must be developed to improve and protect the environment. Environmental awareness of women is essential :

- to promote environmental awareness among all sections of the society.
- to mobilize people's participation for preservation and conservation of environment.
- to promote environment education, especially in the non-formal system among different sections of the society.

1.4.3.2 Eco-Friendliness

Eco-friendliness is nature friendliness. It is associated with environmental conservation and sustainable practices. Women should be becoming more aware to protect the environment. Eco-friendliness advocates, the protection (and restoration, when necessary) of the natural environment through the recognition of humanity as a participant in ecosystems.

1.4.3.3 Solid Waste Management

Solid waste management is the generation, prevention, characterization, monitoring, treatment, handling, reuse and residual of the disposition from population density and low societal levels of the exploitation of natural resources, the amount of waste generated by human. But in modern society, reset of industrialization, the sustained urban growth, the large population, solid waste must be managed to develop the sanitation level and quality of life.

1.4.3.4 Effective Use of Natural Resources.

Natural resource refers to land, water, soil, plants, animals etc. These natural resources must be managed with a particular focus on how management affects the quality of life both for present and future generations. A woman can do it better, as a mother is the centre of a family.

1.4.3.5 Policy Framing and Decision Making.

Policy Framing comprises of a set of concepts and theoretical perspectives on how individuals, groups, and societies organize, perceive and communicate about reality. Framing involves society. It is an inevitable process of selective influence over the individual's perception of the meanings attributed to words or phrases. As women are the primal user of environment and as a mother women can influence her own children through communication, mental representations, interpretations and simplifications of reality, women can be involved in policy framing and decision making in regard to participation in Environmental Management.

1.4.4 Population, Sampling and Representative Sample

Women both in rural and urban areas in the District of Nadia are the population of the study. But to conduct the study more effectively, about 300 women from four Grampanchayets and four Municipalities of the District of Nadia have been chosen randomly as samples.

1.4.4.1 Source

Rural and Urban areas in the District of Nadia.

1.4.4.2 Sample Size

More than 300 women have been participated in the present study.

Distribution of samples in different categories

Table 1.1. Distribution of samples in different categories according to geographical location

Geographical Location	Gender (Only female)
Rural	150
Urban	150
Total	300

The researcher has collected the Samples for her research work from rural and urban areas.

Diagram 1.1. Area-wise Stratification

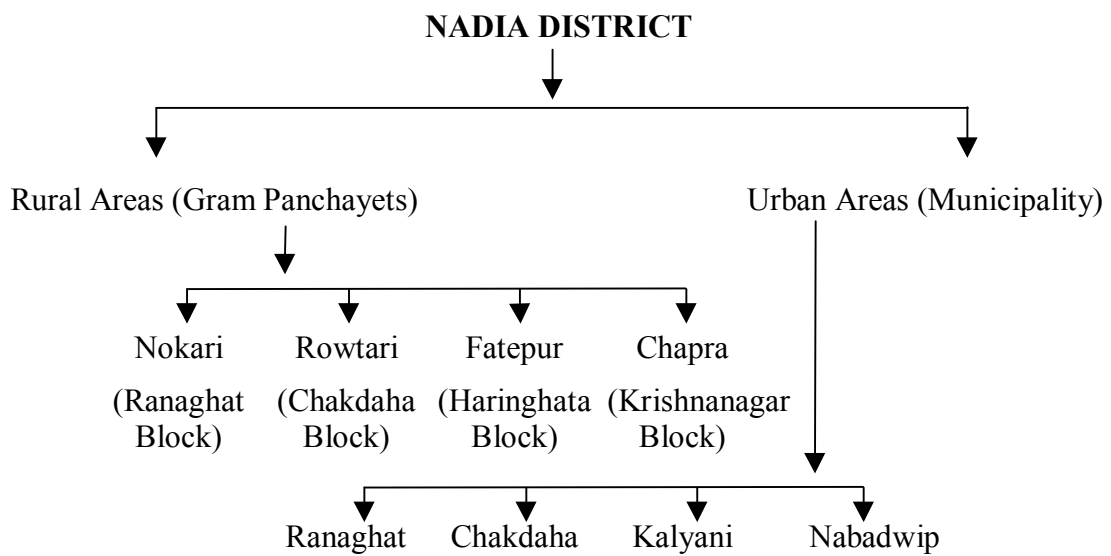


Table 1.2. Area-wise Sample Distribution

Rural					Urban				
Nokari (Rana- ghat Block)	Rowtari (Chak- daha Block)	Fatepur (Harin- ghata Block)	Chapra (Krish- nanagar Block)	Total	Ranaghat	Chak- daha	Kalyani	Naba- dwip	Total
35	40	35	40	150	35	40	35	40	150

Diagram 1.2. Age-wise Stratification

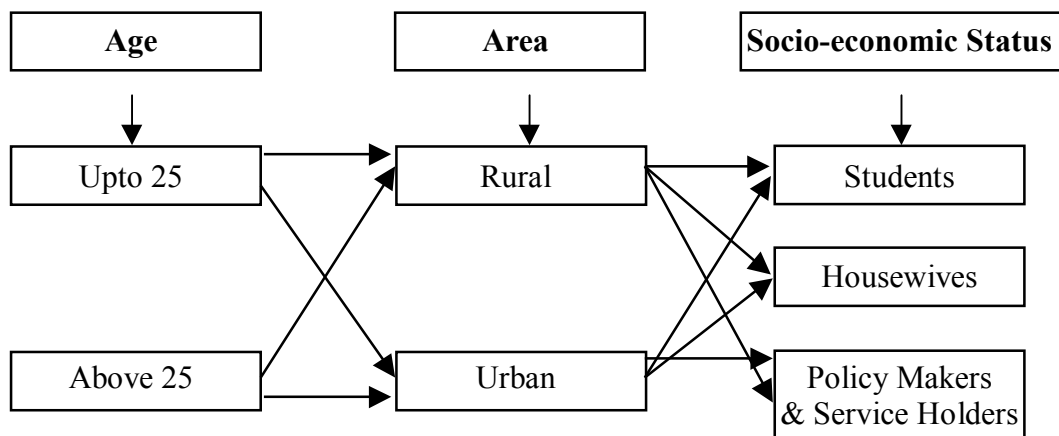


Table 1.3. Age-wise Sample Distribution

Area	Rural			Urban			Total
Socio-economic status	Student	Housewives	Policy Makers & Service Holders	Student	Housewives	Policy Makers & Service Holders	
Age upto 25	25	25	25	25	25	25	150
Age above 25	25	25	25	25	25	25	150
Total	50	50	50	50	50	50	300

1.5 Research Instruments

1.5.1 Tools and Techniques

The following research tools have been used in the present study for collecting data. The tools are selected by applying yardsticks of relevance, appropriateness, reliability, validity and suitability. The tools, used to collect data for study are:

i. Comprehensive Questionnaire.

A questionnaire is a device consisting of a series of questions dealing with some topics given to a individual or group, with the objective of obtaining data with regard to some problems under investigation. Barr *et al.* (1953, p-65) define questionnaire as a systematic compilation of questions that are administered to a sample of population from which information is desired.

Questionnaire is a popular means of collecting all kinds of data in research. It is widely used in educational research to obtain information about certain conditions and practices and to inquire into opinions and attitudes of an individual or a group. The questionnaire is a widely used and useful instrument for collecting survey information, providing structured, often numerical data, being able to be administered without the presence of the researcher, and often being comparatively straightforward to analyse (Wilson and McLean 1994). These attractions have to be counterbalanced by the time taken to develop, pilot and refine the questionnaire, by the possible unsophistication and limited scope of the data that are collected, and from the likely limited flexibility of response (though, as Wilson and McLean (1994: 3) observe, this can frequently be an attraction). The researcher will have to judge the

appropriateness of using a questionnaire for data collection, and, if so, what kind of questionnaire it should be. There are several kinds of question and response modes in questionnaires, including, for example, dichotomous questions, multiple choice questions, rating scales, constant sum questions, ratio data and open-ended questions.

ii. Interview.

The interview is a process of communication or interaction in which the subject or the interviewee gives the needed information verbally in a face to face situation.

Regarding an interview, as Kvale (1996) remarks, as an *inter-view*, an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and emphasizes the social situatedness of research data.

Interviews enable participants – be they interviewers or interviewees – to discuss their interpretations of the world in which they live, and to express how they regard situations from their own point of view. In these senses the interview is not simply concerned with collecting data about life: it is part of life itself, its human embeddedness is inescapable. The interview is a flexible tool for data collection, enabling multi-sensory channels to be used: verbal, non-verbal, spoken and heard. The order of the interview may be controlled while still giving space for spontaneity, and the interviewer can press not only for complete answers but also for responses about complex and deep issues. In short, the interview is a powerful implement for researchers. On the other hand, the researcher using interviews has to be aware that they are expensive in time, they are open to interviewer bias, they may be

inconvenient for respondents, issues of interviewee fatigue may hamper the interview, and anonymity may be difficult. An interview is not an ordinary, everyday conversation (Dyer 1995: 56–8). For example, in contrast to an everyday conversation, it has a specific purpose, it is often question-based, with the questions being asked by the interviewer; the interviewer alone may express ignorance (and not the interviewee), and the responses must be as explicit and often as detailed as possible. The interview is a constructed rather than naturally occurring situation, and this renders it different from an everyday conversation; therefore the researcher has an obligation to set up, and abide by, the different ‘rules of the game’ in an interview.

1.6 Scope and Delimitation

The study has been conducted to estimate the participation of women in the district of Nadia in W.B. with special reference to education, socio-economic condition, awareness, participation in social and environmental management. Considering those points the study has been delimited under the following headings.

1.6.1 Geographical Area

This type of study would be conducted in the whole district of Nadia. But considering the feasibility of the study it has been delimited to four Gram Panchayets and four Municipalities of the said district.

1.6.2 Women

This type of study would be conducted with all categories of women in the district of Nadia. But it is quite impossible to carry out the study with this huge population. So, the study has been restricted on about 300 female belonging to both rural and urban areas of the district.

Chapter – II

IDENTIFICATION OF THE PROBLEM

2.1 Statement of the Problem

A sustainable community can persist over generations, enjoying a healthy environment, prosperous economy and vibrant civic life. It does not undermine its social or physical systems of support. Rather, it develops in harmony with the ecological patterns. Sustainable Development is a process in which a community develops attitudes and ongoing action that strengthen its natural environment, economy and social well-being.

A growing number of communities have begun this process, gathering a number of local initiatives under the umbrella of sustainability. True development is achieved only when the community's plans and actions take into account the roles and the potential opportunities for its present and future stakeholders. Sustainable Development rightly recognises that all decisions pertaining to development must simultaneously consider various aspects of economy, equity, society and environment. It is the community, especially the women who can effectively guarantee the integrity of our human and natural resources.

Nature and natural resources are of crucial importance as they perform essential, social, economic and cultural functions. They are possibly among the world's most diverse, widespread and least understood ecosystems. They are not only important from an aesthetic and philosophical viewpoint, they are also valuable for a wide range of other reasons, specially from the point of sustainable national,

regional and global development. The threat to the nature and natural resources is nothing new. But recently, this threat to the global environment has become a menace. Environmental destruction affects women badly, but they try to re-establish the symbiosis between natural resources, communities and environment, and maintain the reverse trend of the negative impact of existing developmental issues. When a child grows up with the help of mother, the child learns values, attitudes, behaviours and skills from the mother, which have a long lasting impact in the later life. Thus women's honesty and kindness during the education has an important place in the efforts to bring about sustainable development. Women's movements and organizations improve the child's health and maternity which is important to environmental sustainability.

Women play an important role in environmental management and progress. Their full participation is, therefore, essential to achieve sustainable development. Through the ages, they protect and manage the environment through good gardening practices, promoting safe water supplies, maintaining home cleanliness, etc. Today, women are becoming prime movers in environmental reform throughout the world. Women occupy a complex role in society; they are supposed to be the nurturers, the caregivers, the homemakers and have fought long and hard for self-determination and an active role in their communities. So, involving women in protecting the environment to develop and reshape our society is our cry. Elaine Enarson, writer and educator from the United States, speaks of "terrain of disaster" i.e. the natural disasters those are deeply rooted, in social, political, economic and global milieu. Degradation of resources, destruction of the ozone layer, destruction of

biological diversity and desertification are just a few of the great environmental disasters facing humanity today.

Women have a greater awareness to protect the environment. Motivating them to take part in protecting the environment and managing disasters is our present task. They have to develop a sense of responsibility to maintain a good balance between human and earth's resources. Ecological balance and traditional human relations with forests are so intertwined that it is difficult to see them separately. Declining area under forests and the inability of the forest department to conserve forests compel women to give birth to so many environmental movements like Chipko Movement and Green Belt Movements, etc. The researcher has intended to establish the fact that women from various fields come forward participating in environmental activities and movements not only to protect and manage the environment but to make a clean, green and better society when all human beings can 'drink life to the lees'.

So, in this study the researcher has proposed to study the problem as –
“Women Participation in Environmental Management : A Study”

2.2 Emergence of the Problem

2.2.1 Women, Environmental Management and the Need of Education

Environment is a broad concept of the whole range of diverse surroundings in which we perceive experience and react to events and changes. Holistic knowledge about the environment and the laws that govern the ongoing processes in the environment and the interdependence of different elements in the

environment is a priority need for a better understanding, protection and improvement of the environment. The degradation of our environment is linked with the development process and the ignorance of the people. Indeed, no citizens can afford to remain aloof from the issues related to environment. It is, therefore, essential that the aura of the environmental sustainability should be upheld as an integral part of the education process.

It depends on the organization or cognitive maps of a person. Human actions are guided by psychological fields and not by physical environment. Therefore, a sound perception about the environmental Sustainability stands as one of the prime forces for the pristine nature.

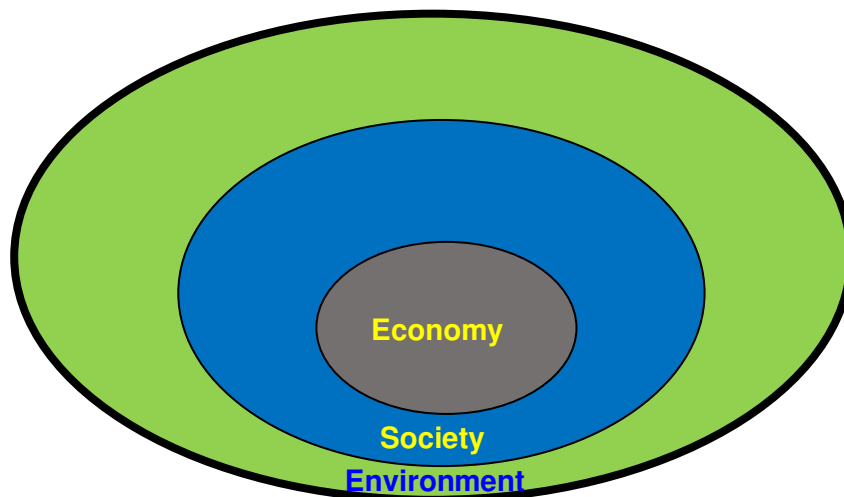
Women have long been associated with nature- metaphorically, as in 'mother Earth', for instance. Our language says it all: the 'virgin' forest. The earth has a natural rhythm linked to the universe around it. Women share that connection. Nature at its core is women. There is a direct connection—a commonality to the earth and her surroundings - which is also related to women. Women, who interact with natural resources for want of survival, feel the impact of environmental degradation more acutely. The relationship between women and environment attains significance because women are perceived as victims of environmental degradation.

Women are traditionally the custodians of nature and protect environment for generations due to their usual motherly character in the society. In fact women are closer to nature than men are. This closeness, therefore, makes women more nurturing and caring towards their environment. Also, women's consciousness of ecological issues makes them better managers of natural resources.

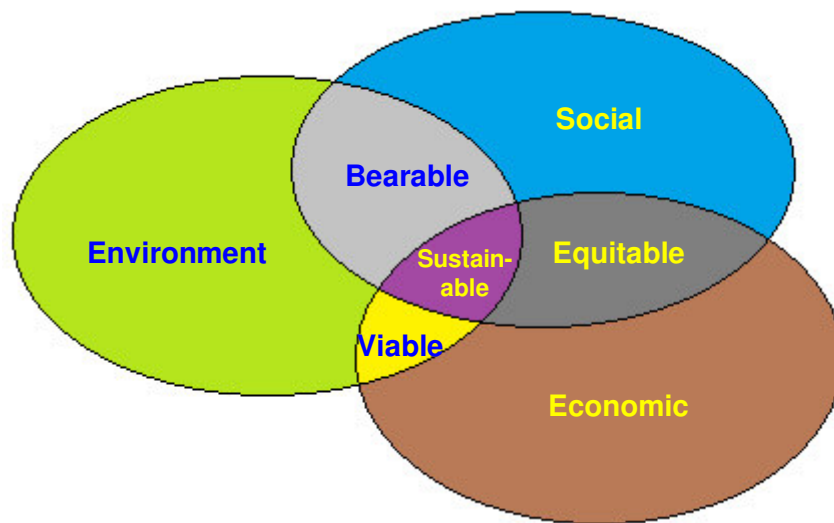
This association between women and natural resources exists because of their social and economic roles, which requires them to provide food, fuel, fodder and income for the surrounding resource base

2.2.2 Women and Environmental Sustainability

The word sustainability is derived from the Latin ‘Sustinere’ (tenere, to hold, sub, up). Sustain can mean “maintain”, ”support” or “endure”. The 2005 world summit on social Development identified sustainable development goals, such as economic development, social development and environment development. This view has been expressed as an illustration using three overlapping ellipse indicating that the three pillars of sustainability are not mutually exclusive and can be mutually reinforcing.



A diagram indicating the relationship between the “Three pillars of sustainability”, in which both economy and society are constrained by environmental limits.



Venn diagram of Sustainable Development at the confluence of three constituent parts.

Formally known as the World Commission on Environment and Development (WCED), the Brundtland Commission in 1987 had drawn upon several notions for sustainable development in its report ***“Our Common Future”***. It contained two key concepts : to propose long-term environmental strategies for achieving sustainable development to the year 2000 and beyond :

- i) the concepts of “needs”, in particular the essential needs of the world’s poor , to which over riding priority should be given: and
- ii) the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.

Our global and immediate environment is increasingly undergoing rapid changes which are very detrimental to the well-being of human population and the entire ecosystem. There is need to improve the relationships between humans and

their environment, including the global aspects of the environment through sound environmental education and management.

2.2.3 Environmental Management : A Concept

In August 2, 1987, Brundtland Commission in the book ***“Our Common Future, Report of the World”*** has defined Environmental Management as-

Environmental management is management and development that meet the needs of the present without compromising the ability of future generations to meet their own needs.

Further according to Pahi-Wost, C (May,2007) in the book entitled The ***“Implications of Complexity for integrated Resource Management”***.

Environmental Management is the management of the interaction and impact of human societies on the environment. It aims to ensure the ecosystem services for future human generations and also maintain ecosystem integrity through considering ethical, economic, ecological, and scientific variables.

Environmental Management, says Colby, M.E. (September, 1991) in the book ***“Environmental Management in Development : The Evolution of Paradigms”***, is the implementation of some strategies those are intrinsically driven by conceptions of human nature relationships.

Thampapillai, Dodo, J. (2002) in his book ***“Environmental Economics : Concepts, Methods and Policies”*** views Environmental Management as the functioning of the economy depending upon goods and services provided by natural ecosystems.

Thus, Environmental management can be viewed from a variety of perspectives. It involves the management of all components of the environment as well as human beings. It should be noted that the essential aspects of environmental management are ethical, economical, social and technological. The concept of environmental determinism, probabilism and possibilism are significant in the concept of environmental resource management.

Environmental management is not, as the phrase could suggest, the management of the environment as such, but rather the management of the interaction of modern human societies and their impact upon the environment. Environmental management is therefore not the conservation of the environment solely for the environment's sake, but rather the conservation of the environment for human-kinds' sake.

Environmental management involves the management of all components of the bio-physical environment, both living (biotic) and non-living (abiotic). This is due to the interconnected network of relationships amongst all living species and their habitats. The environment also involves the relationship of the human environment, such as the social, cultural and economic environment with the bio-physical environment.

Naturally, environmental management aims to alleviate the environmental burden, regenerating earth and creating economic value. So, environmental management activities have become the indispensable element for the survival and growth of enterprises.

2.2.4 Environmental Education : A Concept

Environmental education deals with man's relationship with his natural and man-made surroundings. It also deals with the dynamics of the physical, biological, socio-economic, political and technological dimensions. The aim of environmental education programmes should be, thus, to increase awareness of the environment and its problems; basic knowledge and understanding of the environment and its relationship with man; social values and attitudes which are in harmony with environmental quality; skills to solve environmental problems; and appropriate actions to solve environmental problems to create a sustainable environment.

UNESCO (1976) in its report "*Education for sustainability*" has defined Environmental Education as a way of implementing the goals of environmental protection. It should be carried out according to the principles of life long integral education.

Again Sharma, A.R. (1996) referred Environmental Education as "the awareness of physical and cultural environment, perceiving its relevance for real life situation for the improvement of sustainable development." (p. 29)

Environmental Education, thus, consists of many aspects. Following are the important:

- (i) Approaches to the study of Man-Environment Relationships.
- (ii) Man's Interactions with the Environment through ages.
- (iii) Nature of Man-Environment Relationship.

As the man become social, economic and technological man , he has broadened his environment by creating his own environment through his design and skill to have provision for better food, shelter, access and comfort. The man environment relationship, thus, can be perceived and evaluated in a variety of ways and approaches, as discussed hereunder in brief as mentioned by Shrivastava, K. K. (2008) in his book ***“Environmental Education”, Principles, Concepts and Management*** –

2.2.3.1 Deterministic Approach

This approach is based on the basic tenet of ‘earth made man’ and pays more attention on the complete control of physical environment on man and his activities. In fact, according to deterministic perspectives of man-environment relationships, man is subordinate to natural environment in all aspects of life.

2.2.3.2 Teleological Approach

Teleological approach is based on religious faith of man being superior to nature and all other creatures. This approach of man-environment relationship led to excessive and rapid rate of exploitation of natural resources.

2.2.3.3. Possibilistic Approach

According to possibilistic Approach, physical environment influences man and his activities but there is ample scope for man to change the environment so that it becomes suitable for man and his society.

2.2.3.4 Economic Deterministic Approach

This approach is based on the basic ideology of man's mastery over environment and continued economic and industrial expansion through the application of modern technologies.

2.2.3.5 Ecological Approach

Ecological approach to the man-environment relationships is based on the basic principle of ecology which is the study of mutual interactions between organisms and physical environment on the one hand and interactions among the organisms on the other hand in a given ecosystem.

2.3 Background of the Problem

With the increasing concern for environmental problems, the government institutionalized the environmental issues through new legislations and regulations.

International agencies have swung into action. More comprehensive laws would have been enacted at national and local levels and new agencies have established to make sure the compliance aspects by public in general, and business and industry in particular. It becomes clear that problems like Ozone Depletion or Global Warming cannot be tackled at national level alone. Leaders, politicians and people in general, therefore, would start looking up at organizations like UN for environmental issues.

2.3.1 International Efforts Towards Environmental Pollution Control

Global pollution adversities had been risen to numerous pollution control safeguards throughout the world. Some of the major movements toward this direction were:

2.3.1.1 United Nation's Conferences on Human Environment, 1972

It was in the light of above mentioned scenario that the United Nation's Conference on Human Environment was held in 1972 at Stockholm. It marked the beginning of organized international efforts for comprehensive programme to safeguard environment while also promoting economic development. The following two strategies emerged in this conference:

- (i) The principal action plan was evolved for controlled and regulating human environment.
- (ii) Institutional and financial arrangements were proposed for achieving the goal for regulating human environment.

2.3.1.2 General Assembly's Resolution of December, 1972

Stockholm Conference was followed by the United Nations General Assembly resolution on December 15, 1972 emphasizing the need of active cooperation among the states in the sphere of human environment. The resolution designated June 5 as the World Environment Day and urged government and organization in the UN system to undertake on that day every year worldwide activities reaffirming their concern for the protection of the environment.

2.3.1.3 Character of Economic Rights and Duties of States, 1974

The charter of Economic Right and Duties of States, 1974 was a document of UN. One of its articles stated that:

The protection, preservation and the enhancement of the environment for the present and future generation is the responsibility to ensure that the activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction. All states should cooperate in evolving international norms and regulations in the field of the environment.

2.3.1.4 UN-Habitat Conference on Human Settlement of 1976, World Water Conference of 1977 and other conference.

The international efforts at the protection and preservation of environment became vigorous in 1970s and 1980s. Most important efforts are the:

- (i) UN-Habitat Conference on Human Settlement in Vancouver, Canada in 1976.
- (ii) World Water Conference in Mardel Plata, Aegentina in 1977
- (iii) The UN Desertification Conference held in Nairobi in 1977
- (iv) Paris Conference, held in 1986 called for “saving trees and forests.”

2.3.1.5 World Commission on Environment and Development

In 1980s, international community became seriously concern with increasing problems of environment. It was at this time that Norwegian Prime Minister, Harlem Brundtland was appointed the chairman of World Commission on

Environment and Development, known as Brundtland Commission. The report of this commission called “Our Common Future”(1987) dealt with many issues but the issue of poverty in developing countries in relation to environmental damage was a special focus. It stated that problems of environment could not be resolved without poverty reduction.

2.3.1.6 Earth Summit, 1992

UN convened a United Nation Conference on Environment and Development (UNCED) at Rio de Janeiro in 1992 which is known as Earth Summit. An 8000 page document, called Agenda 21, was issued at this conference. It contains comprehensive blue-print for governments on everything from population strategy, management of hazardous waste, recycling, energy conservation, renewable energy, business strategies to role of women in environment.

2.3.1.7 Rio Declaration

- (i) Reaffirming the Declaration of the UN Conference on the Human Environment adopted at Stockholm on 16th June, 1972, and seeking to build upon it.
- (ii) With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of society and people.
- (iii) Working towards international agreements which respects the interests of all and protect the integrity of the global environmental and development system.
- (iv) Recognizing the integral and interdependent nature of the Earth, our home.

2.3.1.8 Earth Summit, 1997

In 1997, UN convened a conference in New York to assess the progress made in 5 years since earth Summit of 1992: this conference being called as Earth Summit +5. The highlights are:-

- (i) Reconfirm the political commitment to sustainable development from all members of the international community, as well as from all major groups of civil society.
- (ii) Reconfirm the financial commitments and targets for Official Development Assistance (ODA) made by industrialized countries.
- (iii) Establish an Intergovernmental Forum on Forests under the Commission on Sustainable Development.
- (iv) Open high-level Intergovernmental dialogues on fresh water and on energy and transport.
- (v) Make a stronger commitment at the global level of such issues as tourism, changing production and consumption patterns, and eco-efficiency.

2.3.1.9 Kyoto Summit, 1997

180 countries gathered in Kyoto (Japan) in search of coordinated international response to global warming.

2.3.1.10 Earth Summit, 2002

The second world summit on sustainable development was held in Johannesburg from August 26 to September 4, 2002. Key outcomes of this summit are:

- (i) The summit reaffirmed sustainable development as a central element of the international agenda.
- (ii) The linkages between poverty and environmental/resource use were re-examined to strengthen this relationship.
- (iii) Governments agreed to reaffirm the targets and commitments for action for better implementation of sustainable development.
- (iv) Energy and sanitation issues became important elements of negotiation than previous international meetings.

2.3.1.11 Copenhagen Earth Summit, 2009

Earth Summit of 2009 was held in Copenhagen. The agenda of the conference was known as Copenhagen Accord. The key points are:

- (i) A commitment “to reduce global emission so as to hold the increase in global temperature below 2C” and to achieve “the peaking of global and national emission as soon as possible.”
- (ii) Development countries must make commitments to reduce greenhouse gas emissions, and developing countries must report their plans to curb greenhouse gas emission to the UN by 31 January 2010.

- (iii) New and additional resources “approaching \$30bn” will be channelled to poorer nations over the period 2010-12, with an annual sum of \$100bn envisaged by 2020.
- (iv) A Copenhagen Green Climate Fund will be established under the UN convention on climate change, to direct some of this money to climate-related projects in developing countries.
- (v) Projects to reduce greenhouse gas emission in developing countries will be subject to international monitoring if they are internationally funded.
- (vi) Programmes to provide developing countries with financial incentives to preserves forests-REDD (Reducing Emission from Deforestation and Forest Degradation in Developing Countries) and REDD-plus –will be established immediately.
- (vii) Implementation of the accord will be reviewed in 2015 and an assessment will be made of whether the goal of keeping global temperature rise within 2C needs to be strengthened to 1.5C.

2.3.1.12 Policy and Practice of MGDs (Millennium Development Goals) and UNICEF, 2010

The world is not on track to meet the Millennium Development Goal (MDG) target for sanitation. Between 1990 and 2008 the proportion of people without improved sanitation decreased by on seven (7) percentage points. Without an immediate acceleration of progress, the world will not achieve even half of the sanitation target by 2015.

To ensure environmental sustainability they propagate for four targets, such as:-

Target A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

Target B: Reduce biodiversity loss, achieving by 2010, a significant reduction in the rate of loss.

Target C: By 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Target D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

Organization for Economic Cooperation and Development (OECD) (2007): United Nations Conference on Environment and Development (UNCED) September 2000, world leaders committed their nations to 8 Millennium Development Goals (MDGs) to be achieved by 2015. These goals range:

- (i) Halving extreme poverty.
- (ii) Halting the spread of HIV/AIDS.
- (2) Providing Universal Primary Education.

2.3.1.13 Earth Summit, 2012

The World Summit on Sustainable Development (WSSD) or Earth Summit 2002 took place in Johannesburg, South Africa from 26 August to 4 September 2002.

The United Nations Conference on Sustainable Development (UNCSD), also known as Rio 2012, Rio+20 or Earth Summit 2012 was the third International Conference on Sustainable Development aimed at reconciling the economic and environmental goals of the global community. The official discussions had two main themes:

- (i) How to build a green economy to achieve sustainable development and lift people out of poverty, including support for developing countries that will allow them to find a green path for development.
- (ii) How to improve international coordination for sustainable development by building an institutional framework.

2.3.1.14 National Environmental Policy Act (NEPA), 2012

The Women's Initiative for Sustainable Environment's (WISE) approach to the issue of environmental sustainability is an integrated one, as WISE engages in environmental projects and programs in the areas of environmental governance and awareness creation, water sanitation and hygiene, municipal waste management, tree planting, women's rights and empowerment and tourism. Their vision is a safe and just environment for all.

2.4 Constitutional provision

Within five year of Stockholm conference, India amended its Constitution (the 42th Constitutional amendment, 1976) to include "Environmental Pollution Protection" as a constitutional obligation. Article 48A lies down that the state should endeavour to protect and improve the environment and to safeguard the

forest and wildlife of the country. Article 51A relates to fundamental duty. This article has said that it should be the duty of every citizens of India to protect and improve the natural environment including forest, lakes, rivers and wildlife and to have compassion for living creatures.

2.4.1 Tiwari Committee on Environment, 1980

In 1980, Government of India appointed Tywari Committee, to make recommendation on environmental issues. The committee recommended the following:

- (i) Comprehensive reviews and reformation of some of the prevalent Central and State Acts (such as the Insecticide Act, 1968; India Forest Act, 1927).
- (ii) New Legislation for area of action not covered by the present laws (such as those concerning toxic substances).
- (iii) The introduction of “Environment Protection” in the concurrent List of the 7th Schedule.

2.4.2 National Committee on Environment Planning, 1981

National Committee on Environment Planning has also focused on the following functions –

- (i) Preparation of an annual “State of environment Report” for the country.
- (ii) Establishing an Environmental Information and Communication System to propagate environmental awareness through the mass media.
- (iii) To sponsor environmental research.

- (iv) Arranging public hearing or conferences on issues of environmental concerns.

2.4.3 Environment Protection Enactments, 1981

After Stockholm Conference India also embarked on several legislative measures for the protection of environment and for maintaining ecological balance. These were: The water (Prevention and Control of Pollution) Act, 1974, Forest (Conservation) Act, 1980, Air (Prevention and Control of Pollution) Act, 1981. These enactments were amended from time to time to make them more effective. Another significant step was setting up of independent Ministry of Environment and Forest at the Central Government level in 1985.

2.4.4 Environment Protection Act, 1986

The Environment Protection Act (1986) was passed for the protection of environment, regulation of discharge of pollutants, handling of hazardous substances, speedy response in the event of accidents threatening environment and deterrent punishment to those who endanger human environment, safety and health.

2.5 FIVE YEAR PLANS

2.5.1 Ninth Plan, 1997-2002

- (i) Programmes under the above Plan include attempts to phase out lead in motor spirit, improvement in quality of high speed diesel.
- (ii) It has focused on integration of environmental concern with discussion making.

2.5.2 Tenth Plan, 2002-2007

- (i) The Plan has focused upon the reconciliation of population and economic growth with the environmental conservation as an urgent necessity.
- (ii) It also emphasises on Action plans to be finished for reducing pollution levels
- (iii) It has focused on management of hazardous wastes through collection, processing and disposal to be given priority.
- (iv) It emphasises on environmental education among masses through the involvement of NGOs, Youth educational institutions.

2.5.3 Eleventh Plan, 2007-2012

- (i) Protection of the environment has to be a central part of any sustainable inclusive growth strategy.
- (ii) To monitor the development process and its environmental impact in a perspective of sustainable development and to devise suitable regulatory structures to achieve the desire result.
- (iii) Sharing of responsibility at all levels of government and across sectors with respect to monitoring of pollution, enforcement of regulations, and development of programmes for mitigation and abatement.
- (iv) Regulatory enforcement must also be combined with incentives, including market and fiscal mechanisms to encourage both industry and people in their day to day working lives to act in a manner responsive to environmental concerns.

2.5.4 12th Five Year Plan, 2012-2017

- (i) Recognition of a number of serious environmental problems facing India, such as water scarcity and pollution and soil degradation due to over use of chemicals.
- (ii) Recommendation to give environmental orientation to some sectors, such as green manufacturing, 'urban sustainability' and 'tourism' that is ecologically sensitive and community based.
- (iii) To achieve environment related livelihood through the integration of environment, economy and livelihoods.
- (iv) The 11th plan was about 'inclusive growth', now "sustainability" has been added. The slogan is "Faster, More Inclusive, Sustainable Growth", A woman can do it faster.

Human beings are at the centre of concern for sustainable development. To cope with a healthy and productive life in harmony with nature, women play a pivotal role to sustainable production patterns and approaches to natural resource management. Through their management and use of natural resources, women provide sustenance to their families and communities. It is women's support and contribution that can conserve and manage natural resources and safeguard both the natural and social environment. Now it is hightime for women to participate in environmental management.

2.6 Justification of the Problem

The direct and critical relationship between women and natural resources draws its strength not from biology-that is, not because women are born female- but from gender, and the socially created roles and responsibilities that continue to fall to women in households, communities and ecosystems throughout the world. Sustainable development demands recognition and value for the multitude of ways in which women's lives intertwine with environmental realities.

The world is unique for every human being, but, in general, women's lives vary greatly from those of men because of patterns of socialization related to gender. In terms of the environment, women around the world play in forests, dry lands, wetlands, and agriculture; in collecting water, fuel and fodder for domestic use and income generation; and in overseeing land and water resources. By doing so, they contribute time, energy, skills and personal visions to family and community development. Women's extensive experience makes them a valuable source of knowledge on environmental management and appropriate actions.

At the time of the United Nations Conference on Environment and Development (UNCED) which was held in Rio de Janeiro in 1992, the international focus on the environment was mainly on natural resource issues and the intergenerational equity concerns of global warming, collectively dubbed as the "green agenda". The environment was therefore defined predominantly in biophysical terms. There has been a growing awareness of the "brown agenda" which includes environmental problems that are directly linked to the developmental process.

Women have a vital role in environmental management and development. If we talk of natural management from a global perspective, we find that it is the women who are always in the forefront of the race for protection and preservation of the resources. Women particularly those living in rural areas or mountain areas have special relationship with the environment. All women have relationship with environment but the approach is different from urban areas. They are more close to the nature than men and this very close relationship, makes them perfect managers of an eco-system. The life of mountain women is so much interwoven with the environment that whole eco-system revolves around her and she can't even think of her survival without it. For her forest is her mother's home as she is entirely dependent on the forest to meet her daily needs such as water, fodder, fuels, minor forest product etc.

2.6.1 Beijing Declaration and Platform for Action (1995)

The Beijing Declaration and Platform for action identified three strategic objectives in the critical area of women and the environment:

- (i) Involve women actively in environmental decision making at all levels.
- (ii) Integrate gender concerns and perspectives in policies and programmes for sustainable development.
- (iii) Strengthen or establish mechanisms at the national, regional and international levels to assess the impact of development and environment policies on women.

Following the five years review of the Beijing Platform of Action, major achievements in the field of women and the environment are :

- (i) A positive and tentative, trend towards greater participation and involvement of women in environmental decision-making position.
- (ii) Steps to incorporate a gender perspective in local, national and international environmental activities, policies, plans and legislation, as well as in institutional arrangements.
- (iii) Increase in women's capabilities in the environmental field, including their knowledge, skill and organization.
- (iv) A growing quantity and quality of gender-sensitive environmental research and data.
- (v) A more holistic approach that incorporates poverty eradication and women's economic empowerment in environmental conservation and management.

However, during Beijing+5 also a number of obstacles to further progress on women and the environment were identified. These include;

- (i) Low participation of women in environmental protection and management and in the formulation, planning and execution of environmental policies.
- (ii) Insufficient numbers and inadequate influence of women in management of environmental resources.
- (iii) Lack of gender sensitive environmental policies, programmes and research.
- (iv) Absence of deliberate strategies to ensure women's participation in decision-making, including lack of funding and monitoring.
- (v) Low level of management and technical skills among women.

(vi) Women's limited access to resource, information, education and training.

Thus, the Commission on the status of women has rightly argued that involving women in protecting the environment must help the societies to develop the sense of responsibility needed to maintain a good balance between humans and the earth's resources. Women being primarily responsible for domestic and household management, interact more intensively with both the natural and build environment more than men. Consequently, they are more likely to suffer from a degraded home, neighborhood and city movement and to shoulder more of the burden that go with inadequate residential and health infrastructure since they spend more time at home and its immediate vicinity.

Now-a-days, women struggle against alarming global trends, but they are working together to effect change. By establishing domestic and international non-governmental organization, many women have recognized themselves but they have different relationship with environment including different needs, responsibilities, environmental degradation, deforestation, pollution and over-population.

In this conceptualization, the link between women and the environment can be seen as structured by a given gender and class organization of production, reproduction and distribution. Ideological construction such as a gender, of nature, and of the relationship between the two, may be seen as a part of this between the two, may be seen as a part of this structuring but not this whole of it. Women's active movement in protecting resources and their effort in conserving the some take place in different parts of the world. A pertinent question here can be arisen. That is, what

special relationship does women have with nature or for that matter with environment? Is it distinct from that of men's?

To answer such and such relevant questions, there is a dreadful need of such a research study.

2.7 Significance of the Problem

There is no dispute that society needs ethics. One without ethics is doomed to extinction and how successful a society is depends to an extent on how ethical it is.. But trouble begins once we try to determine how a society or its members can become ethical.

Ethics is all about being fair, kind, social .It is about whether garbage would be dumped, water, though paid, would be wasted a road accident victim would be rescued by a passer by. And the key issue addressed here is – how to teach such ethical behaviour? Through Education? Through Participation? Or Through Management?

Indian women as a whole are much more off than men. The woman are less literate , more unemployed , less visible , in the authority structure, more prone to diseases and suffered more from barriers of customs and patriarchal norms and values.

Jawaharlal Nehru in his '*Forward to Social Welfare in India*' (1958) has stated that women in India have a background of history and tradition behind them which is inspiring. It is true however that they have suffered much from various kind

of suppression in all these have to go so that they can play their full part in the life of the Nation.

The Preamble to the Constitution of India resolved to secure to all its citizens in social, economics and Political justice, liberty of thought, expression in belief, faith and worship for both of the individual and the unity of the India.

Indian women are entitled to these rights just as men are. Some of the women specified directive principles are – free and compulsory education for all children upto the age of fourteen, right to an adequate means of livelihood, equal pay for equal work, maternity relief etc. So women must have provided opportunities.

Man is one of the parts of living things and it is very limited part in nature, comparing to other constituents of nature. Man has made progress, due to his intelligence with the help of his intelligence power, he declares himself the whole and sole and started to overcome and control the nature. He becomes the only user of nature and as a result, he disturbs the natural cycle and imbalance it, As a total result, of this the existence of all other living beings has come under severe danger. So it is necessary to create awareness to protect nature and natural resources.

Concept of ‘Bharat Nirman’, ‘Shining India’, ‘Feel Good’, ‘Rainbow’, ‘Socio-Economic Process’, ‘Grass-Root Administration’ and ‘Good Governance’ is not possible without the participation of both rural and urban downtrodden women. Women are engaged in a wide variety of occupations especially in the unorganised sector. Women care for cattle, sow, transplant, harvest, weave, work in house, produce handicrafts etc. They are also engaged in producing and selling a variety of

goods such as vegetables, fruits, flowers, etc. All these activities aim at conservation of nature and natural resources, thereby environmental system ability.

It is very clear that sustainable development is not possible without the participation of woman and gender equality .The active participation of woman and the integration of gender issues in environmental policies are critical determination for the implementation of the commitments.

So, the significance of the present study is :

- (a) To aware women about the true socio-economic and cultural status, educational level and need for participating in each and every field of life.
- (b) To enable women to define themselves against social inequality and resulting marginalisation through their participation in environmental management and developmental progress on gender equality and social security and stability.

2.8 Objectives of the Study

- (i) To study the environmental awareness of women to manage the environment.
- (ii) To find out the participation of women in various environment-related activities to manage and protect the environment.
- (iii) To study the participation of women in policy framing and decision making related to environmental issues for maintaining the environmental balance.
- (iv) To find out the scope of common women participation in different day to day activities related to environmental protection on various fields, like health and nutrition, child care and rearing, afforestation etc.

- (v) To find out women participation in proper and effective use of nature and natural resources to reduce environmental pollution.
- (vi) To explore whether women having better skills in environmental management can reach empowerment.

2.9 Statement of Hypotheses

Hp01: There is no significant difference of mean in Rural Students between age group upto 25 and above 25 with respect to participation in environmental management.

Hp02: There is no significant difference of mean in Rural Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Hp03: There is no significant difference of mean in Rural Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Hp04: There is no significant difference of mean in Urban Students between age group upto 25 and above 25 with respect to participation in environmental management.

Hp05: There is no significant difference of mean in Urban Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

- Hp06: There is no significant difference of mean in Urban Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.
- Hp07: There is no significant difference of mean in age upto 25 between Rural and Urban Students with respect to participation in environmental management.
- Hp08: There is no significant difference of mean in age upto 25 between Rural and Urban Housewives with respect to participation in environmental management.
- Hp09: There is no significant difference of mean in age upto 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service Holders with respect to participation in environmental management.
- Hp10: There is no significant difference of mean in age above 25 between Rural students and Urban Students with respect to participation in environmental management.
- Hp11: There is no significant difference of mean in age above 25 between Rural Housewives and Urban Housewives with respect to participation in environmental management.
- Hp12: There is no significant difference of mean in age above 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service holders with respect to participation in environmental management

Chapter III

REVIEW OF RELATED LITERATURE

The scope of review of related literature was limited to the reported study with particular reference to the participation and effects of both natural and social environment, managed especially by women. More importantly, the review attempted to cover cross-cultural studies written on the above variables both in India and abroad. It was expected that such an attempt would help in understanding the methodological issues as well as growing insight into the theoretical concepts underlying the function and impact of the above variables on environmental management.

Participation of women in Environmental Management depends upon the following fields –

1. Women and Environmental Awareness.
2. Women, Natural Greenery and Eco-Friendly Activities.
3. Women and Water Resource Management.
4. Women and Waste Resource Management.
5. Women, Health, Sanitation and Nutrition.
6. Women and Environmental Pollution.
7. Women and Household Management.
8. Women and Animal Husbandry.
9. Women, Empowerment and Environment.

3.1 Women and Environmental Awareness

The vast majority of the people in India live in rural areas and are engaged in agricultural activities. Rural population involves women folk also to make almost half of it. However, women have acquired a secondary status in social life, economic activities and decision making among their families. Women are almost one half of the world's population having enormous potential but being under utilized or unutilized for the economic development of the nation. There is need to strengthen and streamline the role of women in the development of various sectors by harnessing their power towards nation building and to attain accelerated economic growth. Natural environment and suitable atmosphere are fundamental for encouraging women. Women also have to come forward to utilize their potential in a productive way to make the environment a sustainable one. Many studies have been done in this field.

3.1.1 Studies in Abroad

(A) Aminsad, Z et al. (2013) in Malaysia had conducted a research work on ***“Survey on Environmental Awareness among Environmental Specialist and Secondary School Science Teachers in Malaysia.”***

- Their **objective** was –

to investigate the level of environmental awareness among Secondary School teachers and environmental specialists as club-teachers.

- **Methodology:**

Survey was done among 35 Science Teachers, 20 club teachers of “FormFour” in the district of Kajong, Selanger in Malaysia.

The Dependent variables were the environmental awareness components.

The independent variables were the demographic variables. The questionnaire used as tool.

- **Results:**

- i) Teacher and club members’ increased environmental awareness would have increased the learners’ environment views.
- ii) Women would have more interests to the environmental subjects and they would have much more attention to their environment.
- iii) Media should be used more intensively to facilitate the transmission of environmental information and promote more positive environment attitudes.

(B) Azizi, M, Wahab, M et al. (2010) studied a research work on “*Environmental Awareness and Attitude among Iranian Students in Malaysian Universities.*”

- The **objective** of this study was –

to find out environmental awareness and attitude among Iranian students in Malaysian Universities.

- **Methodology:**

The survey was conducted on 2200 Iranian Students from fourteen Malaysian Universities. The Awareness of Environment Scale (15 items) was used to measure actual awareness of students about global environment.

- **Results:**

The overall environmental issues were moderate and high respectively. In addition, the majority of Students had adequate awareness and attitude about environmental issues.

(C) Glenton, O.Guiriba (2010) in Philippines critically conducted a study on ***“The Role of Woman in Environmental Conservation in Sorsogon Province.”***

- Her **objective** was to find out the links between woman and the environment and to empower women.

- **Methodology:**

Case study Method with seventeen (17) aged women as key informants from Government and Non-Government Organization, working on environmental protection and conservation from the province of Sorsogon, Philippines were selected. The study employed dialogical and interactive qualitative interview.

- **Results:**

- i) Women viewed environment as the life support systems of humanity.
- ii) Womens’ involvement on environmental protection and conservation work was crucial in the management and utilization of the natural resources.

- iii) Womens' commitment and dedication to work was a manifestation of their selfless love and concern for the environment, for their children and for the future generation.
- iv) Womens' limited access and opportunities in the decision making process constrain the implementation of their environment conservation programme.
- v) Women viewed degradation of environment as equal to the degradation of woman.

(D) Ernesto, Lasso De Lanega (2004) examined the Awareness Knowledge and Attitude (AKA) in his study entitled "*Awareness, Knowledge and Attitude about Environmental Education: Responses from Environment Specialists, High School Instructors, Students and Parents*" in Orlando in Florida.

- His objective was to examine the Awareness Knowledge and Attitude (AKA) in Participants of Environment Education (EE) programme as well as their levels of self-efficacy among Schools in Southwest Florida.

- **Methodology:**

The study followed a causal comparative research design with volunteers from Selected Group of related instructors, students and parents. The New Ecological Paradigm (Dunlop, Van Liere, Mertig & Tones -2000); New Environment Paradigm/Dominant Social Paradigm (NEP/DEP) (La Trobe & Acott, 2000); The Ecological Knowledge Questionnaire developed by Morrone, Manel and Carr (2001), Florida Environmental Literary Survey by Bagan and Knomrey (1996) were used as tools.

- **Results:**

Awareness, Knowledge and Attitude (AKA) have been identified as the three most important objectives in the Environment Education (EE). They represent important components in any EE programme and transcend more than just the classroom environment.

(E) Abou-El-Azm, M (2004) at Cairo in Egypt carried out a research work on *“Case Study on Raising Awareness of Woman’s Role in Environmental issues in Fayoum.”*

- His **objectives** were –

- i) to educate women about environmental problems and health related topic.
- ii) to enable women to perform their productive functions while protecting and conserving environment.
- iii) to empower women to assume the responsibility of community development to promote sustainable development.

- **Methodology:** Qualitative survey method was adopted.

- **Results:**

Women would have knowledge on environment problem. This would have a positive impact on the proper use of natural resources and protect them from wasteful practices towards the environment.

3.1.2. Studies in India

(A) Mahajan, Poonam *et al.* (2014) in Indora, Himachal Pradesh had made a thorough research work on –

“A Comparative Study of Environmental Awareness of School Students in Relation to Standard and Sex.”

- Their ***objectives*** were –

- (i) to find out the relationship between male and female students on environmental awareness.
- (ii) to find out the relationship among the different classes of students on environmental awareness.

- **Methodology:**

Survey was conducted. The random method was adopted for sample selection. All together, 300 samples from VIII, X and XII classes from different private and Government schools, affiliated to Punjab Board of Secondary Education were collected. A test named as ***“HassenTaj Environmental Awareness Scale”*** prepared by HassenTaj was employed to get scores on environmental awareness.

- **Results:**

- i) The level of class or standard and sex has an impact on the environmental awareness of school students.
- ii) There was a significant difference between male and female students of each class and males had scored higher mean than the female in each class.

(B) Gupta, Banda and Sharma, Sanjoy (2014) had carried out a research work on
“Awareness, Attitude and Practices toward Environment among Women in Rural Areas of Rajouric (Jammu and Kashmir).”

- Their **objectives** were –

- (i) to know the present status of women in the Jammu, their activities which affect the environment.
- (ii) to assess the awareness among women about their role in environment protection.

- **Methodology:**

Survey was conducted in three villages of Rajouri in Jammu and Kashmir, namely Muradpur, Choudhary Nar and Talwal, through personal interview with the help of a questionnaire.

- **Results:**

There would be a wide scope for women to realize their potential and strength in the field of environment protection so that they can transform themselves from effective home managers to effective environmental managers.

(C) Ali, Romana and Sinha, Bipasha (2013) reviewed on *“A Study of Environmental Awareness and Ecological Behaviour among Female B.Ed. Students.”*

- Their **objectives** were –

- (i) to study the relationship between environmental awareness and the medium of instructions among female B.Ed. students.

- (ii) to study the relationship between environmental awareness and the place of residence among female B.Ed. students.
- (iii) to study the relationship between environmental awareness and the status (i.e. deputed or fresher) among female B.Ed. students.
- (iv) to study the relationship between environmental awareness and ecological behaviours among female B.Ed. students.

- **Methodology:**

Descriptive survey method was followed. Survey was done among 200 female B.Ed. students having English and Bengali as medium of instruction and residing in urban and semi-urbanized rural areas of Kolkata. Tools, used were Environmental Awareness Scale (1994) by Cito and General Ecological Behaviour Scale by Kaiser (1998), statistical treatment included one-way ANOVA and correlation.

- **Results:**

Results indicated the English medium students of urban areas have higher environmental awareness than Bengali medium students of semi-urbanized rural areas. Results further showed that status had no effect on environmental awareness. A position correlation was found between environmental awareness and ecological behaviour.

The study examined the effects of medium of instruction, place of residence and status (i.e. fresher and deputed) on female B.Ed. Students'

environmental awareness and the relationship between their environmental awareness as well as ecological behaviour.

(D) Arunkumar, J. (2013) researched on “*A Study on Assessment of Environmental Awareness among Teacher Trainees in Teacher Training Institutes in Tamilnadu in India.*”

- His **objectives** were –
 - (i) to find the level of environmental awareness of teacher trainees in Teacher Training Institutes in Trichy and its dimensions.
 - (ii) to find the level of environmental awareness of teacher trainees in Teacher Training Institutes in Trichy with regard to their gender.
 - (iii) to find the significance of difference in environmental awareness of teacher trainees in Teacher Training Institutes in Trichy with regard to their gender.

- **Methodology:**

Survey method and random sampling technique were applied. The sample was 300, both male and female, around 5% of the population. The investigator worked out strategy to prepare and validate his research tool, studying the environmental awareness. To establish the item validity of the tool, a pilot study was done. Reliability was established by test-retest method.

- **Results:**

- (i) The level of environmental awareness of teacher trainees in Teacher Training Institutes in Trichy and its dimensions was average.

- (ii) The level of participation in extension activities of teacher trainees in Teacher-Training Institutes in Trichy was average.
- (iii) The level of environmental awareness of teacher trainees in Teacher Training Institutes in Trichy with regard to their gender was average.
- (iv) There was no significant difference in environmental awareness of teacher trainees in Teacher Training Institutes in Trichy with regard to their gender.
- (E) Mete, Jayanta (2013) worked on “*A Study on Environmental Awareness and Ecological Behaviour among Female Student Teacher in B.Ed. Course.*”
 - His *objectives* were –
 - (i) to study the relationship between ecological behaviour and female B.Ed. students in terms of (a) medium of instruction, (b) status and (c) place of residence.
 - (ii) to study the relation between ecological behaviour and medium of instruction of female B.Ed students.
 - (iii) to study the relation between ecological behaviour and status of female B.Ed. students.
 - (iv) to study the relation between pro-social behaviour and ecological behaviour among female B.Ed. students.
 - (v) to study the relationship between ecological behaviour and residence of female B.Ed. students.

- **Methodology:**

A survey was done among 200 female B.Ed. students studying in semi-urban areas of Nadia and North 24 Parganas in West Bengal. In this study, pro-social behaviour and ecological behaviour was the dependent variable and environmental awareness was independent variable. The tools used for field investigation were:

- (a) General Information Schedule.
- (b) Environmental Awareness Scale.
- (c) General Ecological Behaviour Scale.

- **Results:**

- i) There was significant difference between environmental awareness of female B.Ed. students residing in urban and rural areas.
- ii) There was no significant difference between the level of environmental awareness and status of female B.Ed. students.
- iii) There were no significant differences between ecological behaviour of the female B.Ed. students residing in urban and rural areas.
- iv) There was no significant difference between ecological behaviour of B.Ed. students with regard to their status.
- v) There was a positive correlation between environmental awareness and ecological behaviour of female B.Ed. students.

- vi) The pro-social nature of an individual was well reflected in their environmental friendly manner.
- vii) English medium students differed significantly from Bengali medium students on the criterion and environmental awareness because they were urbanized modern and more exposed to environmental degradation.
- viii) The female B.Ed. students of urban areas were more conscious about environmental issues than rural female B.Ed. students.
- ix) There was a positive correlation between environmental awareness and pro-social behaviour or ecological behaviour.

(F) Kumar, Sanjoy (2013) also critically examined on “*Environmental Awareness Among Rural Folks of Hamirpur District in Himachal Pradesh.*”

- His *objectives* were –
 - (i) to assess the environmental awareness in rural areas.
 - (ii) to work out the exposure to environmental pollution in everyday life.
 - (iii) to assess the actual environment friendly behaviour by the rural people.

- **Methodology:**

Fieldwork and survey in almost 25 villages had been made. Education and occupation were the variables.

- **Results:**

There was still a lot of work to be done in informing people on the major environmental problems because people seemed to be aware but not responsible.

(G) Sengupta, Madhumala and Das, Jayanti (2010) studied on “*Environmental Awareness and Environment Related Behaviour of Twelfth Grade Students in Kolkata: Effects of Stream and Gender.*”

- Their *objective* was to understand the effect of stream (Arts, Science and Commerce) and Gender on Twelfth Grade Students’ Environmental Awareness and Environment Related Behaviour in Kolkata.

- **Methodology:**

Survey had been done among 360 Twelfth Grade students, comprising both girls and boys from schools in Kolkata through random probability sampling.

- **Results:**

(i) Environmental awareness was significant source of variation for environment related behaviour.

(ii) The dangerous level of pollution and degradation of nature necessitated that Environmental Education (EE) at school level should be emphasized and its objectives must be achieved.

(H) Tewari, B. K. (2004) studied on “*Environmental Literacy and Awareness among the Women of Mountain Region of Uttarakhand, India; A Situational Analysis.*”

- His *objectives* were –

- (i) to enlist the anthropogenic environmental hazards frequently occurring in the region.
- (ii) to find out the percentage of environmental literacy and awareness among the women of the selected region.

- **Methodology:**

Field survey had been done to measure the environmental literacy and awareness of the women. “*The Environmental Hazards Community Literacy and Awareness Scale (EHCLAS)*” prepared by Tewari, 2004, was used.

Two variables were there. One was environmental literacy on the aspects of Anthropogenic Environmental Hazards and the other Environmental Awareness on the aspects of Anthropogenic Environmental Hazards.

Stratified sampling was adopted. 500 rural and 500 urban inhabitants of the eleven mountain districts (Almora, Bageshwar, Chamoli, Champawat, Dehradun, Nainital, Pauri, Pithoragarh, Rudrapur, Tehri and Uttarakashi) of Uttarakhand were the sample.

- **Results:**

- (i) 47% women of the region were environmentally literate, 59.6% urban and 34.4% rural women were environmentally literate.
- (ii) The level of education, communication and information would determine the level of environmental literacy.

(iii) The rural agrarian economy of the mountain region rested on the shoulders of the women folk.

(I) Hoerisch, Hannah (2002) commented on “*A Comparative Study on Environmental Awareness And Environmentally Beneficial Behaviour in India.*”

- His *objectives* were –

- (i) to find out the most decisive factors in creating environmental awareness.
- (ii) to assess the importance of education in creating environmental awareness.
- (iii) to work out if exposure to environmental pollution in everyday life influences the level of environmental awareness.

- **Methodology:**

Descriptive survey method was used. Tool, used was interview.

- **Results:**

- (i) The role of media in creating environmental awareness was definitively a dominant one.
- (ii) Media, in principle, were able to reach a vast percentage of India’s complex society.

3.2 Women, Natural Greenery and Eco-friendly Activities

Ever since the birth, human beings have been harnessing the natural resources to meet the basic requirements. As a result of unprincipled use of natural

resources, the component of the environment is getting impaired raising threats to the survival of human beings. The disastrous effects can not be eliminated, but the losses can be minimized to a reasonable extent, by application of scientific methods of management. The only solution lies in judicious management of limited resources in an integrated manner, to ensure adequate supply of food, fodder and fuel. Women are the key figures in such judicious management through eco-friendly activities to save natural greenery. Many studies have been done in this field also.

3.2.1 Studies in Abroad

(A) Poul, Hossein *et al.* (2012) had conducted a research work in Iran, entitled

“The Study of Urban Environmental Management with Women’s Participation to Preserve Green Spaces”

- Their **objectives** were –
 - (i) to determine women’s participation factors in urban environmental management based on their occupations.
 - (ii) to determine women’s participation factors in urban environmental management based on their age.
 - (iii) to determine women’s participation factors in urban environmental management based on their educational level.

- **Methodology:**

Descriptive survey method was applied to study women’s participation in preserving green spaces as the urban environmental management. Social indexes

(age, educational level, number of children); financial status (occupation, household expenses) and residential status (residential status such as ownership and accommodation type) were the independent variables and women's participation in urban Environmental management was the dependent variable. Tool was a comprehensive questionnaire, based on five-ordered response level of likert type scale.

- **Results:**

- (i) The age group of 26 to 35 had the most effectiveness in urban management through the establishment and maintenance of green spaces.
 - (ii) The result showed participation and awareness in recycling and green spaces including factors such as creating, protecting and preserving green spaces, garbage segregation, collaboration and following up on neighbourhood's environmental issues. Women would take a great step towards preserving the environment and could increase their participation level.
 - (iii) Women's participation in these matters, in neighbourhood's level, could protect the environment from destruction, planting trees in urban environment, rooftops, front yards, neighbourhood's parks might be regarded as the most effective and economic way.
- (B) Mohammed, Nuratu (2012) in Bayero University, Kano had conducted another research work, entitled : ***“Gender Participation in Environmental Management in Tofa Local Government Area of Kano State: Implication for Sustainable Development.”***

- His **objective** was to study and examine gender participation with particular emphasis on the involvement of women in environmental management in Kano state.

- **Methodology:**

Purposive sampling techniques were used to select the study sites. A sample of 105 female were randomly selected in Yanako, 129 in Yansab and 171 in Yasimawa through systematic sampling technique where a sample was being picked after every tenth (10) households.

The main source of data was through observation, discussion, interview and administration of 405 copies of the questionnaire to samples selected. Information sought was on personal variables of respondents which included their age, sex, marital status, educational level, occupational orientation and their involvement or participation in any form of environmental management.

- **Results:**

- (i) A greater proportion of the women in the study area were made up of youths and adults and this age range happened to be the pick period or active years of labour participation by both men and women.
- (ii) The majority of the women were reasonable enough to participate in environmental management practices in their localities.
- (iii) Environmental management could never be underestimated.

- (iv) Majority of the women were involved in environmental sanitation through the means of sweeping, weeding and drainage clearance.
 - (v) Women's knowledge of the environment emanated from their daily activities with the environment as they were responsible for providing the family's need in terms of fuel, fodder water and food.
 - (vi) The involvement of women in environmental management specifically revolved around farming, tree planting and environmental sanitation. Even then their participation in farming and tree planting was not direct but indirect.
- (C) Akwa, Labaris (2009) in Pennsylvania had conducted another research, entitled, ***"Women Involvement in Environmental Protection and Management: A case of Nasarawa State."***

- The **objectives** were –

- (i) to find out whether women were managers and maintainers of the natural environment.
- (ii) to find out whether women were innovators in the use of appropriate technology in the creation of new environments.

- **Methodology:**

This research had applied two types of data. The first were the secondary source material obtained from past studies on women involvement in environmental protection and management. The second was primary data obtained through questionnaire survey of 250 women in Nasarawa State. Five local government areas

around the state capital were purposively selected, they were, Akwanga, Awe, Doma, Kukona and Toto. The respondents were randomly selected from the various wards and settlements in the study area.

- **Results:**

- (i) Most of the women were energetic to take an active part in environmental management activities.
 - (ii) Married women were likely to be more responsible in protecting and keeping the environment clean because of their roles as home keepers.
 - (iii) Women contributed to land and soil conservation through mulching.
 - (iv) Women were main actors in environmental sanitation of home and communities. About 79% of the women surveyed indicated that they cleaned their surroundings daily, 19% did it weekly, while 1.6% did it occasionally.
 - (v) Majority of women (58.4%) took sweeping as the major activity to clean the environment. Sweeping was followed by weeding (16%), cleaning of drainage (16%) and other activities, such as packing refuse, filling ditches etc. (9.6%).
 - (vi) Women should be allowed to participate at the local, regional and international levels on environmental issues.
- (D) Wickramasinghe, Anoja (1997) in the University of Peradeniya, Sri Lanka had carried out a research work on – ***“Women and Minority Groups in Environmental Management.”***

- The **objective** was to examine how local knowledge and strategy contribute to the management of the resources of local environments.

- **Methodology:**

Field study had been done in the dry zone of Sri Lanka, especially in Kelegama.

- **Results:**

- (i) Women were marginalized in two ways. On the one hand, due to their gender, women were socialized as homemakers and family labour in farming and the management of other resources.
- (ii) On the other hand, women were lacking resources. Indigenous groups were marginalized due to the fact that their environmental management methods were not technical and could not be institutionalized. The information extracted from two field studies conducted in Sri Lanka revealed that for women's and indigenous minority groups environmental management was an integral part of their resource use and therefore integrating locally involved strategies was a way to stabilize, restore and sustain the survival systems.

3.2.2 Studies in India

- (A) Olanike (2010) had conducted the research work entitled, ***“Empowering Women through Environmental Management.”***

- The **objectives** of this research were –

- (i) to improve women's social, economic and political status through developing and managing natural resources.
- (ii) to centre on environmental issues that had a direct bearing on the lives of women.

- **Methodology:**

Survey had been made over more than 500 women.

- **Results:**

- i) Majority of women (especially at the grassroots) were marginalized and discriminated against.
 - ii) They were seen more as victims as positive agents of change.
 - iii) In both rural and urban areas of much of the world, women and children (especially the girl child) often did the hard work of collecting and carrying wood for fuel and collecting water.
 - iv) In the struggle for life, they played their salient roles spending valuable time.
 - v) These prevent them from taking part in more socially valued activities such as getting an education and other necessary and financially productive work.
- (B) Yadav, Naresh (2008) had conducted another research work under the title ***“Women and Environmental Sustainability”***.

- His **objective** was to re-establish the symbiosis between communities, women and natural resources and reverse the trend of negative impact of existing development paradigms.
- **Results:**
 - (i) The protection of women decision makers, planners, advisers and managers related to environmental management should be increased.
 - (ii) Environmental education should be expanded in rural areas.
 - (iii) Women when once mobilized, play a significant role in environmental protection.

3.3 Women and Water Resource Management

In 2000, it has been concluded in the second world water forum that women are the primary users of domestic water, that women use water in their key food production roles, that women and children are the most vulnerable to water related disasters. The international conference on water and the environment, the Dublin statement on water and sustainable development announce that women play a central part in the provision of management and safeguarding of water.

If women can participate in water supply schemes in developing nations, the schemes can run with higher success. Women play an important role in provision, management and safeguarding of water resource management. The issues would be addressed from two perspectives: Facilitation and the participation and involvement of both sexes in water resource management and access and benefits of both sexes in availability of water.

Many studies have been conducted on women and Water Resource Management (WRM) both in home and abroad.

3.3.1 Studies in Abroad

(A) Aladuwaka, Seela and Momsen, Janet (2010) had conducted a study entitled *“Sustainable Development, Water Resource Management and Women’s Empowerment The Wanaraniya water project in Sri Lanka”*.

- Their **objectives** were –
 - (i) to provide a model for better planning of water management.
 - (ii) to find out the impact of involvement in the project on women’s empowerment.
- **Results:**

The implementation of the project has helped women to improve their leadership qualities, confidence, self-reliance and again more power in the community through their successful establishment of a water supply project.

(B) Abdul, Hanvid (2009) had reviewed a similar type of research on the topic *“Social Mobilization and Women’s Participation in Water Resource Management: A Case Study of Southern Pakistan.”*

- The **objective** was to mobilize the society through the participation of women in water management of the locality.

- **Results:**

- (i) The collection of water, which might take upto six hours a day to meet the household needs, was a duty often related to women and children.
- (ii) The foregone time often prevented children, especially girls, from attending school and women from pursuing small business opportunities.

(C) Swallow, Brent et al (2008) had critically examined a research work on ***“Local Organization and Gender in Water Management.”***

- Their **objective** was to explore the relationship between gender relations and collective action in three community water projects.

- **Methodology:** Intensive survey in five villages in Kericho.

- **Results:**

- (i) It was important to involve both men and women in the management of water supplies.
- (ii) The involvement of both men and women was not an equal terms, but in terms those were consistent with their socially defined capabilities and interests.

3.4 Women and Waste Resource Management

Waste is more easily recognized than defined. According to Miller, solid waste is any unless unwanted or discarded materials that is not liquid or gas.

Solid wastes generally are of two types, Bio-degradable and Non-bio-degradable. Bio-degradable (such as, kitchen wastes) are easily decomposed. Non-

Bio- degradable (such as, plastic ware, polythene) wastes are not decomposable. They neither reused nor destroyed.

Waste resource management activities include collection, transportation, treatment, processing, separate collection, recycling, composting and disposal of waste. Neighbourhood associations, communities and small informal enterprises are increasingly involving themselves in the management of household and business wastes.

Men and women often differ in their attitudes towards health and community cleanliness. Irrespective of the status of women outside of the household, within the home women are widely accepted as the caregivers, food prepares and maintainers of the domestic environment. In most societies, this role carries over to an accepted role for women in community maintenance, often focusing there as well on cleanliness, health and order. A number of studies have also been carried out on this topic both in India and Abroad.

3.4.1 Studies in Abroad

(A) Ratcke, Miliand (2013) had carried out a research work on *“Case Study on Solid Waste Management at Agartala City.”*

- His **objectives** were to investigate –
 - (i) Mode of waste collection
 - (ii) Waste generation storage.
 - (iii) Waste treatment.

- **Methodology:** Descriptive Survey method was followed.
- **Results:**

The initial step would be taken by the community members to establish Garbage Bank. Secondly, steps would be taken to provide knowledge on household waste management, as well as would make them realize the value of household waste. Thirdly, it was to buy the waste from households by the organization. Also the housewives could sell them to garbage bank directly. The garbage bank activity would also provide value added to compost and recycled wastes. The mechanism of collecting wastes from small-scale sources to a bulk volume would help in raising market price of the wastes.

3.4.2 Studies in India

(A) Krishna, Abhilak et al (2013) had carried out a research work entitled “*Case Study of Solid Waste Management at a College Campus*” at Coimbatore in India.

- His **objectives** were –
 - (i) to obtain a clear picture of the magnitude of waste generation.
 - (ii) to present management techniques and the methods those could be employed to tackle the problem of waste.

- **Methodology:** Descriptive Survey method was followed.

- **Results:**

It would provide training workshop related to the recycling of the waste. Garbage bank also would create jobs for the women of the society.

(B) Jatindra, P.K. and Sudhir, K. (2009) had reviewed on the work entitled “*E-Waste Management: A Case Study of Bangalore in India.*”

- Their **objectives** were-

- (i) to document existing sources of E-Waste streams along the life cycle including product assembly, pre and post usage, management and disposal.
- (ii) to identify the improved practices based on E-Waste collection, flow and recycling system in Bangalore city of India.

- **Methodology:**

Survey method had been applied. In depth interviews were done as a tool of qualitative research.

- **Results:**

Proper education about the waste through certain organization such as seminar, gramsabha, school, college etc. would make the E-Waste Management a popular one.

3.5 Women, Health, Sanitation and Nutrition

UNICEF's overall objective in the health and sanitation sector is to promote the survival, protection and development of children and to promote behavioural changes essential to realising the full benefits of health and sanitation services.

These and other objectives cannot be met without the full participation of women. In much of the world, women and girls are traditionally responsible for domestic water supply and sanitation and maintaining a hygienic home environment. As managers at the household level, women also have a higher stake in the improvement of health and sanitation services and in sustaining facilities.

There is no doubt that Indian women suffer from poor health and hygiene, this could be attributed to life-long discrimination of their parental families and with regard to food, education but also in health care issues. A study by AIIMS examined 85,633 children aged 0-36 months and found a result that showed a gender bias, total number of boys hospitalized 64.6% and only 35.4% were girls. Further studies have indicated that boys are immunized than girls, boys are breast-fed longer, girls eat after all of the male family member and get less food of poorer nutritious quality. Mortality related diseases like diarrhea, respiratory infections and measles is higher among girls than boys. 1.5 million of the 12 million girls born in India each year do not survive to their 1st birthday and only 9 million will survive to their 15th birthday.

Women's health issues have been of concern to women's groups NOGs who have been constantly indicating that there is a significant relationship between

socio-economic conditions and women's health. So many studies have been conducted both in India and outside India.

3.5.1 Studies in Abroad

(A) Bloom, Jesse *et al.* (2014) in America had carried a research work on ***“Nutrition and Eating Habits and Women.”***

- Their ***objectives*** were –

- (i) to find out the choice of children's nutrition in perspective of their mother.
- (ii) to allow children to see nutrition as more than the simple act of buying or consuming food.
- (iii) to show the mother the cultural, social as well as economic issues present in food and nutrition.

- **Methodology:**

Survey through health and nutrition related questionnaire among one hundred people had been done.

- **Results:**

The majority of mothers believed that dietary choices would be based on their enjoyment of the food they eat, constrained by economic factors and finally by health concern and social considerations.

(B) Amin, Wakar *et al.* (2013) had reviewed on “***Effective Awareness Generation Methods for Rural Sanitation Campaign: A Study from a Village in Haryana.***”

- Their **objectives** were –

- (i) to find out the relationship that existed between awareness creating method to be adopted by the rural population based on their age, educational level and gender.
- (ii) to find out the most effective method for creating awareness among the rural population regarding sanitation.

- **Methodology:**

A qualitative approach was used to satisfy the goals of the study. Stratified random sampling method was used and interview was used as a tool for data collection. Sample was comprising of 160 respondents of both male and female above 18 years from Kasandi Village of Gohana Block in Sonipat District of Haryana.

- **Results:**

- (i) Street play, rally, public lectures, pamphlets were the best methods for generating awareness among the general public regarding sanitation issues.
- (ii) The educational level of the community members played an important role.
- (iii) The community participation should be ensured in devising any awareness strategy for them.

(C) Kempen, E. L. *et al.* (2012) carried out a research work on “*A study of the Relationship between Health Awareness, Lifestyle Behaviour and Food Label Usage in Gautengin South Africa.*”

- Their **objectives** were –

- (i) to determine whether consumers who read food labels were also more aware of health and lifestyle issues in terms of nutrition and other health-related lifestyle behaviour.
- (ii) to find out whether there was a relationship between food-label reading, health awareness and lifestyle behaviour.

- **Methodology:**

A quantitative descriptive survey was selected to investigate the relationship between food-label reading on the one hand and health awareness and lifestyle behaviour on the other. A two-stage, stratified, proportionate and systematic sampling strategy was applied to select a sample of 357 Gauteng respondents to complete a telephonic questionnaire. Non-parametric analysis, Scale reliability test, Analysis of Variance (ANOVA) and Bonferroni Multiple Comparisons of Means Tests were used to analyze the results.

- **Results:**

- (i) Results indicated that the two-thirds of respondents who, to some extent read nutritional information on food labels, were concerned about their personal health, were interested in health-related information, and followed a healthy

lifestyle, such as regularly eating fresh fruit and vegetables, cutting back on alcohol and other positive life-style behaviours.

- (ii) They were unsure about how their own knowledge of nutrition, and their understanding of nutrition information on food labels, compared with that of other consumers. A relationship was found between patterns of reading food labels, health awareness and life-style behaviour. People who often read food labels were health-conscious and maintained a healthier lifestyle.

(D) Zugravu, Aurelia Corina (2012) in Romania studied on *“Eating habits and influential factors for mothers and children in Romania.”*

- The **objective** of this study was to evaluate mother child correlation of nutritional habits and to find factors determining them.

- **Methodology:**

A cross sectional study was carried out on a random sample of Urban Romanian mothers who had to answer to demographical and nutritional questionnaires on mother's and children's nutritional habits.

- **Results:**

- (i) The study showed that nutrition of mother and of child in Romanian families were highly correlated, that mother's education, on first place and income, on the second place, were the main determinants of child's and women's nutrition and that more educated women dealt better with challenging nutrients like fats.

(E) Tanzania (1995) in Sweden had critically reviewed on ***“Health Through Sanitation and Water.”***

- The ***objectives*** of this study were –

- (i) to improve the welfare of both rural and urban population.

- (ii) to improve health education, environmental sanitation and drinking water supply.

- (iii) to improve water supply management.

- **Methodology:**

Survey method was done over a total of 730 villages in all the 75 districts.

- **Results:**

It was the result that the mass consciousness and health education, especially women education might help to solve health problem, faced by the people. People in the target areas were finally responsible for maintaining facilities to ensure their sustainability.

3.5.2 Studies in India

(A) D’ Angelo, Caroline (2012) in India critically commented on ***“The women, water and Sanitation Crisis and the role of the transnational corporation : An Evaluation of Initiatives, Incentives and Impacts.”***

- The **objectives** of this study were –
 - (i) to point out the position of women access to water and sanitation.
 - (ii) to study whether water and sanitation access could improve productivity of the work force, could create better relationships and develop sustainability.
- **Methodology** : Survey method was followed.
- **Results:**
 - (i) Women's capacity to have input into water-resource use and management had been hampered by their lack of exposure to the basic knowledge of Science and understanding of the technologies regarding water resource management.
 - (ii) The weight of the water they could carry, added with the distance to water sources, would create fatigue, back, feet and posture problems, pelvic deformities among women and girls and also would expose them to a greater risk of malnutrition, anemia. The heat might increase their exhaustion. Women's reproductive health was also affected; in some cases spontaneous abortions took place.
- (B) Sharma, Shubhangna *et al.* (2009) carried out a research work on “***Health Awareness of Rural Adolescent Girls: An Intervention Study.***”
- Their **objective** was to find the awareness of adolescent girls regarding health aspects.

- **Methodology:**

A survey was conducted on a group of 112 adolescent girls of age 14 to 18 years, selected randomly from two blocks – Panchmukhi and Bhawarna, district of Kangra of Himachal Pradesh. The tool consisted of Socio-Economic Status (SES) Scale and a General Awareness Schedule.

- **Results:**

Women possessed attribute and skills which were vital to ecological sustainability. They could play a major contribution in managing and conserving natural resources.

(C) Diaz, Esperanza *et al.* (2008) also reviewed on “*Self-rated Health among Mayan Women participating in a Randomized Intervention trial Reducing Indoor Air Pollution.*”

- The **objectives** were –

- (i) to compare self-rated health and change in health among women participating in a randomized control trial, comparing a chimney stove with an open fire.
- (ii) to describe impacts on women’s daily lives and their perceptions of how reduced kitchen smoke would affect their own and their children’s health.

- **Methodology:** Survey method was followed.

- **Results:**

Women’s perception of their health was improved but although smoke reduction was valued, this was linked mainly with alleviation of non-respiratory

symptoms like eye discomfort and headache. More focus on such symptoms might help in promoting demand for improved stoves and cleaner fuels, but education about more severe consequences of IAP exposure was also required.

(D) United Nations Organizations (2005) had conducted a research work on ***“Gender, water and Sanitation and Health.”***

- The **objectives** of this study were –
 - (i) to promote gender equality and empower women.
 - (ii) to contribute of sound water resource management and ensuring sound health.
 - (iii) to access to safe drinking water and basic sanitation to improvise health condition and sustainability.
- **Methodology:** Descriptive survey method was followed.
- **Results:**
 - (i) There was a close relationship among the health status of a population, hygienic conditions and environmental sanitation. There was also a close relationship between women and hygiene. Society’s ascribed role of women as a caregiver, women could be expected to nurse the sick at home, sometimes even terminally ill patients. Lack of knowledge in this area sometimes caused serious harm to the person who was nursing.
 - (ii) The health and nutritional status of women and girls was due to poor hygiene and housing conditions, unsafe drinking water, inadequate sanitation facilities,

poor menstrual hygiene, disproportionate workload, physical and rental violence.

(E) World Health Organization (WHO) (2005) had also carried out a work on *“Study on Multi-Country Study on Women’s Health and Domestic Violence against Women.”*

- The **objectives** of this study were –

- (i) to estimate the prevalence of violence against women with particular emphasis on physical, sexual and emotional violence by male intimate partners.
- (ii) to access the extent to which intimate partner violence was associated with a range of health outcomes.
- (iii) to identify factors that may either protect or put women at risk of partner violence.
- (iv) to document and compare the strategies and services that women use to deal with violence by an intimate partner.

- **Methodology** : Descriptive survey was followed. Interview was also taken.

- **Results:**

- (i) The society should promote gender equality and women’s human rights.
- (ii) Multispectral action plans to address violence against women might be established, implemented and monitored.

(ii) Social, political, religion and other leaders might speak out against violence against women.

(iv) Systems for data collection to monitor violence against women and thereby protecting and maintaining both mental and physical health of women might be established and enhanced.

3.6 Women and Environmental Pollution

When contaminants can cause adverse change, there occurs pollution into the natural environment. Pollution can also be the consequence of a natural disaster. Pollution has been found to be present widely in the environment. To protect the environment from the adverse effects of pollution, many nations world-wide have enacted legislation to regulate various types of pollution as well as to mitigate the adverse effects of pollution.

Pollution control is a term used in environmental management that aims at Sustainable Development. Sustainable development (SD) refers to a mode of human development in which resource use aim to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come.

Traditionally women have a deep involvement with environment. Even women have to face most of the problems within the family. The role of women is very important to keep the ecological balance and to get a good livelihood. The main roof of ecological balance is to develop natural qualities. Most of the women in India do not awaken the possibilities of their inner qualities due to sex-inequality.

Most of the women in India, due to inequality, can't play the role to improve the wealth of society, as they are economically dependent upon others on health, nutrition and education. In India women do not play a vital role in taking decision in a family. So, to get a positive outcome of family welfare can be expected only if the participation of women in the decision making process is possible. The high increase in population is also a severe problem to protect the environment and make it pollution free. But to protect the family as well as the environment much more involvement of women is necessary. Several studies have also been done on this area.

3.6.1 Studies in Abroad

(A) Gainesville (2014) in Florida had carried out a research work on “*Air Pollution and the Increasing Risk for Hypertension in Pregnant Women.*”

- His *objective* was to find out relationship between the air intake even breathing cigarette smoke and mom-to-be's hypertension.
- **Methodology:**

A descriptive survey had been done. More than 22000 pregnant women who gave birth in Jacksonville between 2004 to 2005 and environmental data from their communities were surveyed.

- **Results:**

There was a highly positive correlation between the air, breathed and mom-to-be's hypertension. In the mother's womb the baby could develop deadly complication like preeclampsia even in its prenatal stage.

(B) Hui, Fen Chie *et al.* (2006) in Taiwan reviewed on “***Outdoor Air Pollution and Female Lung Cancer.***”

- The ***objective*** of this study was to investigate the relationship between air pollution and female lung cancer.
- **Methodology:**

Case-control Study was done using female deaths that occurred in Taiwan from 1994 to 2003. Data on the female death suffering from lung cancer deaths were obtained from the Bureau of vital statistics of the Taiwan Provincial Department of Health. The control group consisted of women who died from causes other than cancer or diseases associated with respiratory problems.

- **Results:**

Women who lived in the group of municipalities with highest levels of air pollution exposure index were at a statistically significant increased lung cancer risk compared to the group living in municipalities with the lower air pollution exposure index after controlling for possible cofounders. The findings of this study would warrant further investigation in the etiology of lung cancer.

3.6.2 Studies in India

(A) Anita, Thatus *et al.* (2012) had conducted a research work on “***A study on Role of Women in Controlling Environmental Pollution at Household level***”.

- Their **objectives** were –

- (i) to reduce environmental pollution in rural areas by creating awareness among the rural residents.
- (ii) to study the role of women in controlling environmental pollution in household level.
- (iii) to analyze the existing sanitary practices followed by rural women at household level.

- **Methodology:**

100 rural women of Bengenakhawa village of Golaghat District of Assam were surveyed. Interview schedule and observation were used as tools. Secondary data were collected from books, journals, newspapers, research publications, websites etc.

- **Results:**

- (i) There was a need to create awareness regarding environmental pollution among village women so that they could be motivated to control environmental pollution to some extent at household level.
- (iii) The women whose knowledge regarding environment was poor, should be made environmentally literate and they should be encouraged in environmental development programmes such as tree plantation, kitchen gardening, compost preparation, use of smokeless chullahs, solar cooker, domestic water fitter, water recycling and establishing environmental culture.

(B) Sankar, Siddhatha (2006) also researched on the topic, ***“Indoor Air Pollution and Women Health in the Informal Sector.”***

- His **objectives** were –

- (i) to find out socio-economic status of the households.
- (ii) to use fuel pattern and cooking practices of the household.
- (iii) to find association among combustion of bio-fuels, air pollution and women health.

- **Methodology:**

A descriptive survey was conducted covering 2580 individuals, of which 967 women, 1082 men, 255 girls, 276 boys below 14 years of age in 740 households in 20 villages of Cooch Behar, Darjeeling etc. Data were collected through face to face interview of the chief cook of the house along with any helping hands.

- **Results:**

- (i) More people were engaged in informal sector, of which women were generally employed in domestic services, bidi making, agriculture and allied activities, construction work, brick making and rural artisans.
- (ii) It was found that almost all (94.46%) of surveyed households in rural villages of North Bengal used bio-fuels for cooking such as – dung cake, crop residue, fuel wood etc.
- (iii) Indoor air pollution due to lack of air ventilation would come out to be a major environmental and public health hazard especially from women and new born.

3.7 Women and Household Management

Men and women are almost equal in the total global populace. But still women are not given equal status with men and this unequal gender role in the socialization process operates in every society. Like men-folk, women must have equal roles to play for the progress of both home and society.

In informal process and formal area of education often the authority tries to reinforce the socialization process of preparing girls to be soft, dedicated, polite, peaceful, tolerant, passive and submissive.

But women can better manage the home and other areas in our daily life. Almost in all country women have the prime responsibility for nutrition, child care and household management. Much studies have also been done on this area.

3.7.1 Studies in Abroad

(A) Ivanova, Plamena (2007) had carried out a work on *“Women’s roles in the Household: Popular Press Depictions of Gender Roles in the USA.”*

- Her **objective** was to examine the gender biases in the management of household in the United States between 1870 and 1960.
- **Methodology:**

It was a historical research. Sources were the contemporary popular press and culture.

- **Results:**

To compare modern women with the women of the thirties, there was a big progress in women's emancipation. Gradually, everyone in the family would be concerned about household tasks and home management. Men were equally responsible with their female counterparts for the management of their house.

(B) Another similar work was also done by Day, Julie (2007) in Yorkshive entitled, ***"Elite Women's Household Management."***

- Her **objective** was to examine the managerial role of elite women from a range of Yorkshire country houses.

- **Methodology:** It was a historical research.

- **Results:**

The expression of power was demonstrated. Elite women could exercise within a sphere traditionally thought of as a female space. The domestic space of the country household had long been associated with feminine accomplishment in the 'Delicate' art of needlework or the knowledge of pickling and preserving. In her role as household manager this space was more heavily saturated with command, authority and organizational skill.

(C) Kengistie, Bizatu and Baraki, Negga (2000) studied on ***"Community Based Assessment on Household Management of Waste and Hygiene Practices in Kersa Woreda, Eastern Ethiopia."***

- Their **objective** was to assess the status of waste management and hygiene practices in Kersa Woreda, Eastern Ethiopia.

- **Methodology:**

A cross sectional study was conducted in Kersa Demographic Surveillance and Health Research Centre (KDS-HRC) Project site in April 2008. The study subjects were randomly selected 444 households. Data were collected through interview and observation.

- **Results:**

The majority of the households (66%) disposed solid wastes in open dumps and only 6.9% of the households had temporary storage means for social waste. About 98.4% of the respondents revealed that the responsibility of waste management was left for women and girls. Only 36.4% households had latrines and almost all were simple unsanitary traditional pits. From those households, the habit of hand washing after defecation was reported to be only about 5.1%. The habit of hand washing after defecation was significantly associated with the educational status of the respondents.

3.7.2 Studies in India

(A) Bentley, E, Margaret (2014) had made a research work on ***“The Household Management in Rural North India.”***

- The **objective** of this study was to investigate the variation in the household management of women.

- **Methodology:**

Descriptive survey method was used to collect data on a series of variables, including women's knowledge, beliefs practices, customs, prevailing in the society.

- **Results:**

The results showed positive and negative management behaviour both. Anthropological research of household management could provide important information. These information would result in improved intervention design to better manage the household.

- Tripathy, Asuthosh *et al.* (2009) had critically reviewed on “*Women's Economic Contribution through their Unpaid Household Work: The Case of India.*”
- The **objective** of this study was to quantify women's unpaid household work and to assess gender discrimination in carrying out unpaid work in terms of leisure time, and decision making.

- **Methodology:**

A cross-sectional study had been done. An interview schedule was used. The sample consisted of 25 urban men (3 single and 22 married) and 25 rural men (all married); 75 urban women (5 single, 62 married, 6 widowed and 2 divorcees) and 75 rural women (all married) for a total of 50 men and 200 women, in Nagpur City in Maharashtra and Jhalap, a village in the state of Chhattirgarh in South Eastern India, respectively.

- **Results:**

Most women often spent six to eight hours per day on paid activities. 60% of women in this study were involved in paid activities after which they carried out their household activities. This double burden left these women with only a negligible amount of time for them.

3.8 Women and Animal Husbandry

Animal husbandry signifies as the second largest economical activity next to agriculture in rural areas. It provides employment and economic support to rural families. Women besides their responsibilities as homemakers perform many of the important tasks in animal husbandry. Caring to animals is considered as an extension of domestic activities.

Contribution of farm women in agriculture is likely to be around fifty to sixty percent. Women play an important role in animal husbandry activities as manager, decision makers and skilled workers. They help in farm operations, take their animals for grazing, look after the sale of milk and in addition, perform the functions related to house management. Rural women contribute a share of more than 75 percent in animal husbandry operations like feeding, milking and sale of milk. The prosperity and growth of a nation depends on the status and development of the women in the society.

3.8.1 Studies in Abroad

(A) Geerlings, Ellen (2013) commented on *“Women’s Work in Agriculture, Animal Husbandry, Access to Resource, Mobility and Education in Afghanistan.”*

- The **objective** was to assess the improvement and involvement of Afghan women in those respective fields.

- **Methodology:**

Survey method was followed. In some cases, some women were personally interviewed.

- **Results:**

The young women might fit much better in Kabul where women would be benefited from relatively more rights and freedom compared to the rest of the country.

3.8.2 Studies in India

(A) Upadhyay, Sengeeta and Desai, P.C. (2011) had made an intensive survey on *“Participation of Farm Women in Animal Husbandry in Anand District of Gujarat.”*

- Their **objective** was to study the socio-economic profile of farm women, their participation in decision-making for animal husbandry practices and various aspect of animal husbandry occupation.

- **Methodology:**

A survey was done among 120 farm women selected by the proportionate sampling method from the Anand district of Gujrat State. The tool, used was interview. The statistical measures such as percentage, mean score, standard Deviation and coefficient of Karl pearson's correlation were used.

- **Results:**

About two-fifth (42.50%) of the farm women had farming and animal husbandry as major occupation for their livelihood. Further most of them had medium level of expenditure on dairy animals, mass media exposure and extension contact.

(B) Raut, C.K. (2004) worked on *“Estimation of Women Labour in Animal Husbandry Activities.”*

- His **objective** was to estimate the woman labour in the field of Animal Husbandry in India.

- **Methodology:** A thorough survey was done.

- **Results:**

The total time utilized in various activities for animal keeping in rural areas, women contributed about 25% to 35% and remaining by men and children. They were mostly engaged for milking, feeding and stall cleaning almost throughout the year. Woman labour input (assuming 8 hours of work per day as norm) was 84 to

92 days in the rural areas of Haryana, West Bengal, Tamil Nadu and Rajasthan; 100 days in Maharashtra and 76 days in Andhra Pradesh.

3.9 Women Empowerment and Environment

Empowerment is a multi-dimensional social process that helps people gain control over the lives, communities and in their society. Empowerment of women involves many things – economic opportunities, property rights, political representation, social equality, personal rights and so on.

The implications of the ideas “Women Empowerment” and “Environment and Environmental Sustainability” are matter of contemplation of late. “Women Empowerment” is a vast concept. Though there is no benchmark to measure the effectiveness of women participation in society, it means different to various hierarchical strata. “Women Participation” not only means the growing consciousness among women to seize the rights, the power within to discover the freedom in every aspect of life and face the enlightened day but it is indicated at its justification also. On the other hand environmental sustainability refers to the advancement of civilisation without hampering the environment and the ecology. To maintain the sustainability of environment, the role of women is vast.

3.9.1 Studies in Abroad

(A) Ampumuza, C. *et al.* (2008) in Netherlands worked on “***Women Empowerment through Tourism.***”

- The **objective** was the assess empowerment of women through tourism in Netherlands.

- **Methodology:**

A survey was done among 300 backward community women. Tool, used was interview.

- **Results:**

80% of the backward community women took the tourism training and were economically empowered.

Empowerment of women would mean equipping women to be economically independent and personally self-reliant, with a positive self-esteem to enable them to face any difficult situation. Moreover, they should be able to contribute to the developmental activities of the country. The empowered women should be able to participate in the process of decision-making. Women empowerment is a dynamic process that consists of an awareness – attainment – actualization cycle. Again, it is a growth process that involves intellectual enlightenment, economic enrichment, social emancipation, participating in environmental management on the part of women.

3.10. Modern Trends in Research Studies on Women and Environment in Today's Contemporary World

In the early 1970s, the Women, Environment and Development Debate (WED) regarding the symbiosis of women and their connection with the environment sparked an interest. On this theme, a book was also then written by Ester Boserup entitled *“Women's Role in Economic Development.”* Vandana Shiva, a woman

environmentalist had introduced the issue of women and the environment in the Mexico City at the First World Conference in 1975.

Starting in the 1980s policy makers and governments became more mindful of the connection between the environment and gender issues. In 1991, the World Bank declared:

“Women play an essential role in the management of natural resources, including soil, water, forest, energy and often have a profound traditional and contemporary knowledge of the natural world around them.”

Though women were previously neglected or ignored, an increasing attention has been paid to the impact of women on the natural environment and in return, the effects the environment has on the health and well-being of women. Today’s environmental feminists have argued on the dependence between nature and the environment of survival. Since 1940s, this dependency has uniquely been raised for survival of not only the women herself but for their generations.

Sustainable Environment is the driving force of the growth and development of a nation. Community should take the collective responsibilities to manage the environment. The natural environment like forest, river, hills etc. occupies a central position in human culture and economy. The way of life is very much dictated by the natural environment right from birth to death. It is ironical that the women of India are living in the areas of richest natural resources. Historically women have been pushed to corners owing to economic interests of various dominant groups. In contemporary India, women are indeed our best friends to save nature and natural resources.

According to the Women Environmental Development Debate (WED), there is a positive correlation between degradation of the environment and the subordination of women. The same has also been observed by Carolyn Merchant and Vandana Shiva. Shiva has found the rapture within nature and man. This rapture is also an associated transformation from a life-force that sustains to an exploitable resource, characterizing the Cartesian view to displace more ecological world views and to create a development paradigm, crippling nature and women simultaneously.

Exploitation of women's labour as well as the abuse of natural environment is connected as they are both marginalized within the economy. Both the environment and women have been viewed as exploitable resources that are significantly undervalued. This argument supports eco-feminism. The women in developing countries rely on nature to survive. Therefore destruction of the environment results in elimination of women's method to survival. Eco-feminism says that women are closer to nature than men are. This closeness, therefore, makes women more nurturing and caring towards their environment.

Throughout history men have looked at natural resources as commercial entities or income generating tools, while women have trended to see the environment as a resource supporting their basic needs. As an example, rural Indian women collect the dead branches, which are cut by storm for fuel wood to use rather than cutting the live trees. Any change in the environment like deforestation, casts much impact on women and cause them to suffer until they can cope with these changes. A historic approach to women's health which include both nutrition and health services now are to be adopted by the government and all other organizations. Special attention would be given to the needs of women and the girl at all stages of

the life cycle. The reduction of infant mortality and maternal mortality, which are sensitive indicators of human development, is now a priority concern. Women should have access to comprehensive, affordable quality healthcare. All these arguments support women health, nutrition and sanitation issues with the provision of safe drinking water, sewage disposal, toilet facilities, waste management within accessible reach.

Solid waste management (SWM) may be defined as the generation, storage, collection, transfer and transport, processing and disposal of waste. It is also responsive to principles of health, economics, engineering, conservation, aesthetic environmental consideration and public attitudes. The solution of solid waste management may involve in different fields such as city and regional planning, geography, economics, public health, sociology as well as engineering and material science.

In most households, women's primary responsibility is cleaning, food preparation, maintaining family health, laundry and domestic maintenance. Women and men may view domestic waste and its disposals differently. They may also manage waste differently and put different priorities on its disposal. Women do not always have equal input into allocation of family finances. To get rather privilege in family a woman has to know the ways how the waste can return to her hand. To manage the solid waste properly by women, it should be helpful because women play a pivotal role here. Hence waste management and reduction of pollution have been derived in this study.

Today, the human civilization has changed from agricultural society to cybernetic age where knowledge is considered as capital and knowledge industry is considered as the most demanding industry in the world. However, a new paradigm better known as sustainable development has emerged with the objective to combat the menace of destabilization of planetary ecology and reducing the ever increasing demand for resources. Sustainable development is that kind of development which meets the needs of the present without compromising the ability of the future generations to meet their needs. The three components of sustainable development are economic, environment and social aspects of development. Women are the key factors who are closely associated with sustainable development which is also a focus of our study.

The researches have proved that women are more concerned with the degradation of environment and consumer studies indicate that they take more personal actions like recycling, saving water, saving energy and use environment friendly transports in comparison to men. They also play strong role in educating and socializing their children and teach them to care and respect the environment.

Hence it is imperative that the women are empowered to take decisions in matters of helping others to develop the responsibility with regard to use and protection of natural resources. For this women should be given an enabling and supportive environment and proper training for capacity building.

Thus day by day, women have a deep involvement with forest, thereby the environment. Many studies show that in remote areas, women spend long hours in collecting fuel, wood for cooking, fodder for cattle and water for home

consumption. Hence, many ecological movements have been initiated mostly by women. Some of them are the following :

3.10.1 Chipko Movement :

The chipko movement or chipkoandolon is primarily a livelihood protection movement as well as a forest conservation movement. It was a protest against a King's order through the act of hugging trees to protect them from being felled, beginning with Amrita Devi in Khejarli village, in 1730 AD, when almost 363 Bishnois sacrificed their lives. Later in the early 1970s, in the Garhwal Himalayas of Uttarkhand, then in Uttarpradesh, this movement spread fast especially in recent years by the great hand of Sunderlal Bahuguna.

3.10.2 Appiko Movement :

It is also a revolutionary environmental conservation movement in the Uttara Kannada district of Karnataka State in Southern India under the leadership of Pandu Ram Hegde in September 1983. A crowd of men, women and children of the said district 'hugged the trees ' (the local term for 'hugging' in Kannada is appiko) only to save nature from the hands of so called devastating development of three major P's-paper, plywood and power those though where intended for the development of the people, finally resulted in a fourth P-poverty.

3.10.3 Narmada BachaoAndolon :

The Narmada BachaoAndolan or Narmada Movement had been started around 1985 as a protest against the construction of the Sardar Sarovar Dam on the

River Narmada in Gujrat, a western state of India only to save the trees and the fauna under the leadership of Medha Patekar and Baba Amte.

3.10.4 Green Belt Movement:

In 1977, Professor Wangari Maathai of the National Council of Women of Kenya, organized an indigenous grassroot non-governmental organization named as Green Belt Movement in Nairobi in Kenya to take a holistic approach to develop environmental conservation, community development, capacity building, etc. The motto of this movement was to plant trees, combat deforestation and restore the main source of fuel for cooking, generating income and stopping soil erosion, paying much attention to eco-tourism only for economic development.

3.10.5 Navdanya Movement :

World renowned scientists and environmentalist Dr. Vandana Shiva started Navdanya Movement to provide direction and support to environmentalism in the year 1984.

Navdanya means nine crops that represent India's collective source of food security. The main aim of the Navadanya bio diversity conservation programme is to support local farmers to rescue and conserved crops and plants that are being pushed to extinction and make them available through direct marketing.

3.10.6 Kenyan Land Takeover:

Starting from the mid-1980s, a protest was made by the women in Kenya to improve a access to land and strengthen women's land rights. The movement was against Kenya's land customary law system in which women had no rights to own

land and limited rights to access or use land though the Kenyan women would care and love the land a lot.

Participation is a multifaceted process which calls for pooling of resources to secure collective strength and countervailing power and entail the improvement of manual and technical skills; administrative and managerial capabilities and planning and analytical abilities of human being.

So, participation is an active process by which beneficiaries acquire knowledge, understand role, responsibilities and functions of the concerned. Effective participation of all fields of environment must be done when women are more importantly taking part in it.

Both the process of participation and management are individual as well as collective, since it is through involvement that people most often begin to become aware and develop the ability to organize themselves for taking decision in bringing about change. It is absolutely essential that women must participate to manage the environment well not only for themselves but for the sake of environment and thereby society.

Chapter-IV

METHODOLOGY AND DESIGN OF THE STUDY

The study has been conducted with a view to women and their participation in environmental management in the district of Nadia in West Bengal. To conduct this study a systematic plan was developed by the researcher. This chapter deals with the plan of the studies i.e. the design of the study, which covers methodology, samplings, tools and a very brief action plan of the study.

4.1 Method

The present study has been carried out through descriptive survey method. The details regarding sample, tools, procedure of data collection are reported under:

4.2 Type of Research

The type of research is Descriptive Survey type.

4.3 Dimension

The study has been based upon five dimensions. These five dimensions covered the major aspects of participation in Environmental Management. The dimensions are as follows: -

1. Awareness.
2. Eco-Friendliness.
3. Solid Waste Management.

4. Effective Use of Natural Resources.
5. Policy Framing and Decision Making.

4.4 Methods of Controlling Variables

Age, Sex and Environmental Awareness are independent variables.

Age was controlled by selecting subjects of a particular group from more to less same age group.

Sex was controlled by selecting all female subjects.

Environmental Awareness was controlled by selecting all the urban subjects from a single area and again all the rural subjects from another single area.

4.5 Population, Sampling and Representative Sample

All the women both in rural and urban areas in the district, Nadia are the population of the study. But to conduct the study more effectively, about 300 women from four grampanchayets and four municipalities of the district, Nadia have been chosen randomly as samples.

4.5.1 Source

Rural and Urban areas in the District, Nadia.

4.5.2 Sampling Technique :

Multi-Phasic Stratified Random Sampling Technique is adopted. This is a method of sampling that has involved the division of a population into smaller groups known as 'Strata'. In Stratified Random Sampling, the Strata have been

formed, based on members' shared attributes or characteristics. A random sample from each Stratum has been taken in a number proportionate to the stratum's size when compared to the population. These subsets of the Strata have been then pooled to form a random sample.

4.5.3 Sample Characteristics

- i. Only women from both rural and urban areas in the District, Nadia.
- ii. Only Bengali speaking women have been taken.

4.5.4 Sample Size

More than 300 women have been participated in the present study.

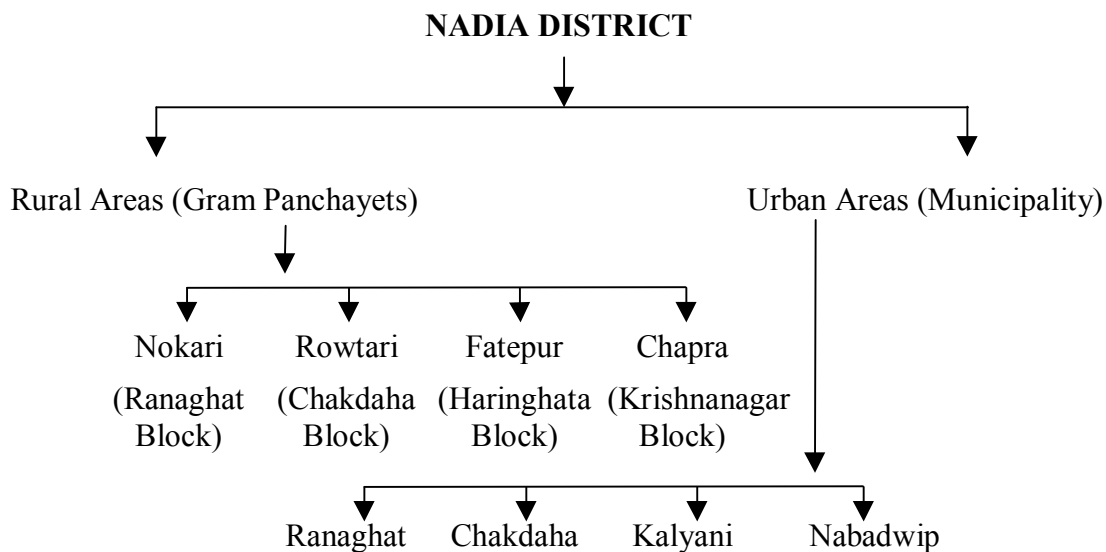
Distribution of samples in different categories

Distribution of samples in different categories according to geographical location

Geographical Location	Gender (Only female)
Rural	150
Urban	150
Total	300

The researcher has collected the Samples for her research work from rural and urban areas.

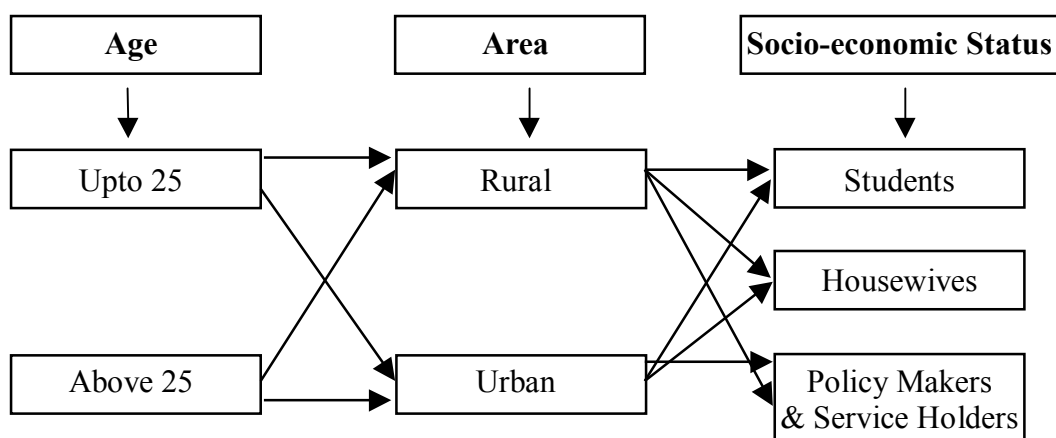
Area-wise Stratification



Area-wise Sample Distribution

Rural					Urban				
Nokari (Ranaghat Block)	Rowtari (Chakdaha Block)	Fatepur (Haringhata Block)	Chapra (Krishnanagar Block)	Total	Ranaghat	Chakdaha	Kalyani	Nabadwip	Total
35	40	35	40	150	35	40	35	40	150

Age-wise Stratification



Age-wise Sample Distribution

Area	Rural			Urban			Total
Socio-economic status	Student	Housewives	Policy Makers & Service Holders	Student	Housewives	Policy Makers & Service Holders	
Age upto 25	25	25	25	25	25	25	150
Age above 25	25	25	25	25	25	25	150
Total	50	50	50	50	50	50	300

4.6 Research Instruments

4.6.1 Tools and Techniques

The following research tools have been used in the present study for collecting data. The tools are selected by applying yardsticks of relevance, appropriateness, reliability, validity and suitability. The tools, used to collect data for study are:

- i. Comprehensive Questionnaire.
- ii. Interview.

4.6.2 Construction of Tools

All the tools have been constructed with the help of experts, resource persons and available variables. Following general steps have been adopted for the construction of tools.

4.6.2.1 Step I

In the first step, lists, items and statements were collected from various sources and these were classified and systemized after a thorough discussion with experts.

4.6.2.2 Step II

Necessary modifications of statements were made on the basis of experts' suggestions and tools were made ready for try out.

4.6.2.3 Step III

First try out was made on one grampanchayat and one municipality on a small group parallel to the sample. On the basis of try out results further modifications were made where necessary.

4.6.2.4 Step IV

For more sophistication, the tools were again administered on a parallel group of both rural and urban women of illiterate, primary educated, gradually higher educated group. Finally the data were collected and the limitation of the tools had been pointed out.

4.6.2.5 Step V

Tried and sophisticated form of the tools were finalized after removing the limitations of the step and the tools were ready for final administration. Before finalizing the questionnaire, it had been judged by a group of experts namely educationists.

4.7 Item Collection

In the process of items the researcher has taken active help and guidance from some experts, research guides and other resource persons, in the subject. Their selected items has been listed and submitted to the supervisors for their critical comments and advice for final selection of items.

4.8 Item Writing

The researcher has considered that the tool must have a design of an attitude scale to serve the purpose of the study. The researcher has preferred Likert type as the suitable study of Attitude Scale for the following reasons:

- (a) It is easy to construct and score.
- (b) It gives valuable information.
- (c) It does not require panel of judges and it takes time to construct and to score.
- (d) Moreover, it produces some variable data as Thurstone's Scale.

In this content it is noteworthy that "Attitude Scale provides us with one means of obtaining an assessment of the degree of effect that individuals may associate with some psychological object."

From the collected information, statements have been framed with much care to make the statements clear and specific. At the time of item writing, the researcher has consulted with four experts. Finally, the valuable and relevant suggestion, taken from the four experts has duly been incorporated.

4.8.1 Standardized Form of the Test

The final form of the test contains 50 items from item analysis. Each item has to be endorsed in a 5 point scale from "Strongly Agree" to "Strongly Disagree" with the neutral point of "Undecided".

4.8.1.1 Scoring Key

The Scoring Key has been developed by the present researcher. The responses of the items are categorized as **Strongly Agree (SA)**, **Agree (A)**, **Undecided (U)**, **Disagree (D)** and **Strongly Disagree (SD)**.

The individual statement is either positive or negative. To score the scale, the alternative responses are credited as 5, 4, 3, 2 and 1 respectively from the positive to the negative end and 1, 2, 3, 4 and 5 respectively from the negative to the positive end.

The distribution is shown in the table below.

Table 4.1. Scoring Key

For Positive Statements					For Negative Statements				
SA	A	U	D	SD	SA	A	U	D	SD
5	4	3	2	1	1	2	3	4	5

4.9 Item Analysis

The major objectives of Item Analysis are the improvement of total score reliability or total score validity or both, the achievement of better item sequences and types of score distributions.

For the present study, at first the scores have been arranged in a descending order. Next, the scores have been segregated as high group and low group. Then the scores of top 27 % of women and bottom 27 % of women have been determined. After that, they have been arranged in tabulated form. From this tabulation ‘t’ test analysis for each item has been done.

From the item analysis, Mean of High Group (M_1) and The Mean of Low Group (M_2), Standard Deviation of High Group (SD_1) and the Standard Deviation of Low Group (SD_2) and the Validity of High Group (V_1) and the Validity of Low Group (V_2) have been calculated. Thus ‘t’ test has been done to get the ‘t’ value.

Table 4.2. ‘t’ Test for Item Analysis

Item Analysis						
	High Score		Low Score		t	Sig. level
Item	Mean	SD	Mean	SD		
1	4.98	0.14	4.70	0.54	3.69	**
2	4.91	0.29	3.98	1.11	5.94	**
3	4.98	0.14	3.83	0.84	9.90	**
4	4.91	0.35	4.57	0.60	3.51	**
5	4.19	0.91	2.30	1.25	8.95	**
6	4.72	0.63	4.09	1.23	3.35	**
7	4.81	0.70	4.06	1.09	4.31	**
8	4.06	1.38	4.43	1.02	1.59	NS
9	4.06	0.86	1.93	1.29	10.13	**
10	4.85	0.63	3.54	1.45	6.12	**
11	3.07	1.65	2.54	1.06	2.02	*
12	3.91	1.10	1.96	1.20	8.78	**
13	4.33	1.01	4.48	1.02	0.76	NS

14	3.09	1.56	2.02	1.25	3.95	**
15	2.83	1.69	2.11	1.24	2.53	*
16	3.70	1.30	2.57	1.37	4.40	**
17	4.85	0.56	4.33	0.89	3.62	**
18	5.00	0.00	4.50	0.91	4.06	**
19	4.94	0.30	4.46	0.91	3.71	**
20	4.63	0.68	3.91	1.47	3.28	**
21	1.96	1.23	2.07	1.11	0.49	NS
22	3.15	1.61	2.17	1.22	3.57	**
23	4.80	0.74	3.30	1.31	7.32	**
24	4.33	0.67	2.43	1.52	8.41	**
25	2.35	1.20	4.15	1.29	7.48	**
26	4.28	0.71	2.63	1.23	8.51	**
27	3.19	1.29	1.89	1.27	5.27	**
28	4.35	0.52	3.57	1.19	4.40	**
29	3.33	1.27	2.98	1.28	1.43	NS
30	4.15	1.23	3.69	1.18	1.99	*
31	4.81	0.55	4.06	0.90	5.29	**
32	4.80	0.63	4.09	1.01	4.34	**
33	4.11	0.74	2.61	1.32	7.26	**
34	4.13	0.97	3.20	1.11	4.62	**
35	3.94	1.02	2.50	1.02	7.36	**
36	4.19	0.68	3.13	1.36	5.11	**
37	4.63	0.59	3.07	1.11	9.06	**
38	4.06	0.71	3.28	1.34	3.77	**
39	3.70	1.08	2.46	1.48	4.99	**
40	3.78	1.41	3.48	1.21	1.17	NS
41	2.70	1.59	3.57	1.19	3.22	**
42	4.96	0.27	4.70	0.54	3.17	**
43	4.50	0.93	4.20	1.42	1.28	NS

44	3.72	1.02	1.81	1.03	9.69	**
45	3.74	1.14	2.72	1.64	3.75	**
46	4.54	0.72	3.11	1.38	6.72	**
47	3.33	1.39	2.28	1.23	4.18	**
48	5.00	0.00	4.67	0.75	3.26	**
49	4.96	0.19	4.13	1.06	5.66	**
50	4.96	0.19	4.48	0.79	4.33	**

**Sig. at 0.01 level, *Sig. at 0.05 level, NS = Not Significant

N =	108
t at 0.05 =	1.98
t at 0.01 =	2.62
df =	106

4.10 Reliability of the Test

A test is called reliable where there are reasons for believing the test to be stable and trustworthy. The correlation of the test with itself is called the reliability coefficient of the test.

The reliability coefficient has been computed between the test and retest scores and r has been found to be 0.86.

No standardized, alternative or parallel form of the questionnaire was available for testing the reliability and validity of the constructed scales. Hence the validity was judged on the basis of experts' opinion. A systematic procedure was adopted during the construction of questionnaire and these were modified or

sophisticated according to experts' opinion. Hence on the basis of experts' judgment the questionnaire was considered as valid for the purpose. The reliability of a tool or test is usually expressed in terms of various reliability tests. They are :

- Test-Retest Reliability.
- Equivalent or Parallel Forms of Reliability.
- Internal Consistency.
- Split-Half Technique etc.

In this present study, the reliability of the tool has been estimated by calculating Cronbach's alpha (α). This technique is based on item statistics and estimates internal consistency of the test as a whole when there is one common factor or of the test dimensions when items in a dimension are homogenous (Guildford, 1975). As the present tool has been assumed to hold both of these assumptions, the estimation of Cronbach's alpha (α) has been thought to be justified.

The values of Cronbach's alpha (α) for the total inventory as well as for each dimension of the inventory are presented in the tabulated form to prove the internal consistency of each dimensions of the Women Participation in Environmental Management Questionnaire.

Table 4.3. Reliability Analysis-Scale [Cronbach's alpha (α)]

Sl. No.	Dimensions	Mean	Std Dev.	Cases
1.	Awareness	73.2792	8.0033	308.0
2.	Eco-Friendliness	69.1526	8.2450	308.0
3.	Solid Waste Management	26.2857	3.2501	308.0
4.	Effective Use of Natural Resources	78.8734	7.8521	308.0
5.	Policy Framing and Decision Making	82.5455	14.1852	308.0

Table 4.4. Summary Item Statistics

Statistics for	Mean	Variance	Std. Dev.	No. of Dimensions
SCALE	330.1364	1185.2843	34.4280	5

Table 4.5. Inter-Item Correlation Matrix

Dimensions	No. 1	No. 2	No. 3	No. 4	No. 5
Awareness	1.0000				
Eco-Friendliness	0.6186	1.0000			
Solid Waste Management	0.4725	0.1591	1.0000		
Effective Use of Natural Resources	0.6361	0.5297	0.5531	1.0000	
Policy Framing and Decision Making	0.6761	0.7062	0.2999	0.6373	1.0000

Table 4.6. Item-Total Statistics

Dimensions	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
Awareness	256.8571	781.5626	0.7591	0.5966	0.7509
Eco- Friendliness	260.9838	793.3646	0.6974	0.5655	0.7661
Solid Waste Management	303.8506	1085.7366	0.4155	0.3949	0.8484
Effective Use of Natural Resources	251.2630	804.9046	0.7154	0.5810	0.7638
Policy Framing and Decision Making	247.5909	495.7539	0.7730	0.6294	0.7840

Reliability Coefficients

N of Cases = 308.0 N of Items = 5 Cronbach's Alpha (α) = 0.8224

Standardized Item Alpha = 0.8488

In regard to the reliability of the proposed scale, the score of Cronbach's Alpha (α) for the scale is 0.823 (Standardized Alpha = 0.849), indicating highly reliable internal consistency of the scale.

4.11 Validity of the Test

According to the American Educational Research Association, Standards for Educational and Psychological testing, (1990), ‘Test Validity is the extent to which a test accurately measures what it purports to measure.’

In the fields of educational testing, validity refers to the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests. Although classical models divided the concept into various “Validities” (such as Concept Validity, Criterion Validity, and Construct Validity), the currently dominant view is that validity is a single unitary construct.

Validity may be classified into many types. But among these, the given four types of validity are of vital importance.

Content Validity : It refers to the degree to which the tool actually measures or is specially related to the traits for which it has been designed. Content validity is based on careful examination of course text-book, syllabi, objectives and the judgement. There is no numerical way to express it.

Predictive Validity : It is a measure of how well one variable or set of variables predicts an outcome based on information from other variables and will be achieved if a set of measures from a personality test relate to a behavioural criterion on which psychologists agree.

Concurrent Validity : It is the extent to which the measures are demonstrably related to concrete criteria in the “real” world. This type of validity is often divided into “Concurrent” and “Predictive” sub-types of validity.

Construct Validity : It is the appropriateness of inferences made on the basis of observations or measurements (often test scores), specially whether a test measures the intended construct. It is essential to the perceived overall validity of the test.

The present questionnaire which has been constructed by the investigator, certainly has ensured high content validity, because it has adequately covered the content and objectives of the present research. It is important to note that the content validity of the questionnaire has been done on the basis of careful analysis by a number of scholars and subject expert.

Chapter - V

PROCEDURE FOR DATA COLLECTION AND ANALYSIS OF THE DATA

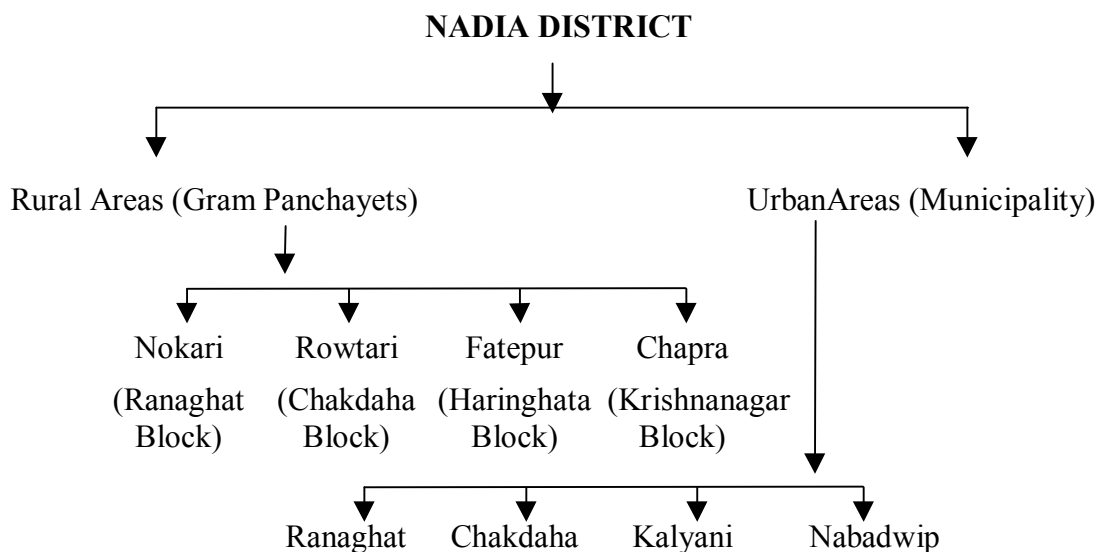
5.1 Introduction

This chapter deals with sampling procedure, administration of tools and collection of data. The relevant data on different constructs have been collected by administering the above-mentioned tools on the subjects under study in accordance with the direction provided in the respective manuals of the tools. In the following geographical areas the data have been called :

5.2 Study Area

The study has been conducted in the four Gram Panchayets and four Municipalities of the district, Nadia. The list of the Gram Panchayets and Municipalities have been selected randomly. The selected grampanchayets and municipalities are -

5.2.1 Area-wise Stratification

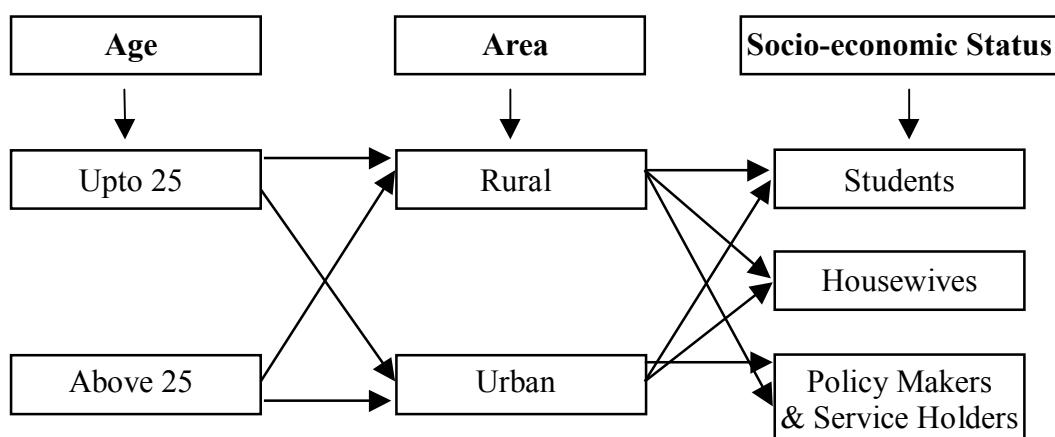


5.2.2 Area-wise Sample Distribution

Rural					Urban				
Nokari (Rana- ghat Block)	Rowtari (Chak- daha Block)	Fatepur (Harin- ghata Block)	Chapra (Krish- nanagar Block)	Total	Ranaghat	Chak- daha	Kalyani	Naba- dwip	Total
35	40	35	40	150	35	40	35	40	150

The investigator herself went to each Grampanchayet and each Municipality and required number of samples have been selected from those places. The age and socio-economic status-wise stratification of the samples are following :

5.2.3 Age-wise Stratification



5.2.4 Age-wise Sample Distribution

Area	Rural			Urban			Total
Socio-economic status	Student	Housewives	Policy Makers & Service Holders	Student	Housewives	Policy Makers & Service Holders	
Age upto 25	25	25	25	25	25	25	150
Age above 25	25	25	25	25	25	25	150
Total	50	50	50	50	50	50	300

5.3 Administration of Tools and Collection of Data

All the tools were administered on the selected samples as per predetermined plan. Data have been collected through the questionnaire from both rural and urban women of all categories in District, Nadia in WB. The questionnaires were supplied to each of the selected sample and necessary instructions were given to them for responses. The method of structured interview was adopted to collect data from the illiterate women sample. Accordingly more than half of the year has been spent to complete the collection of data for the survey. Alternative and open ended questions were also used for the purpose. For easy communication and responses, all the questionnaires were constructed in Bengali.

Before conducting the survey for data collection, necessary rapport had been made with the selected samples. In addition to primary sources the secondary sources as books, journals, reports etc. had been used for collecting data. Now it was time that the collected data would be processed with the help of appropriate statistical technique and results would be extracted thereafter.

5.4 Scope and Delimitation

The study had been conducted to estimate the participation of women in environmental management in the District of Nadia in W.B. with special reference to this education, socio-economic condition, awareness, participation in Social and environmental management. Considering those points, the study had been delimited under the following headings.

5.4.1 Geographical Area

This type of study would be conducted in the whole district of Nadia. But considering the feasibility of the study it had been delimited to four Gram Panchayets and four Municipalities of the said district.

5.4.2 Women

This type of study would be conducted with all categories of women in the district of Nadia. But it had been quite impossible to carry out the study with this huge population. So, the study had been restricted on about 300 female belonging to both rural and urban areas of the district.

5.4.3 Dimension

The study on the participation of women and their awareness of environment had been getting special importance in recent times. But in this study the engagement of women with reference to education and their participation in social and environmental management had been selected.

5.5 Analysis of the Collected & Processed Data

Data had been processed with the help of appropriate statistical techniques and results had been extracted thereafter. Here the researcher intended to analyse data, collected through field survey to assess the literary status, level of education, participation in environmental activities, women's consciousness regarding health, nutrition, child care etc. The analysis had also been made to find out the relationship of socio-economic attributes and variables like caste, age, mental status, nature of family, occupation, family income of women selected as sample for

the study. The researcher had attempted to assess the socio-cultural and environmental awareness, participation in natural activity and type of exploratory works undertaken by the villagers as well as the policy-makers executives and service women members. The researcher had also attempted to assess the relationship among the dimensions:

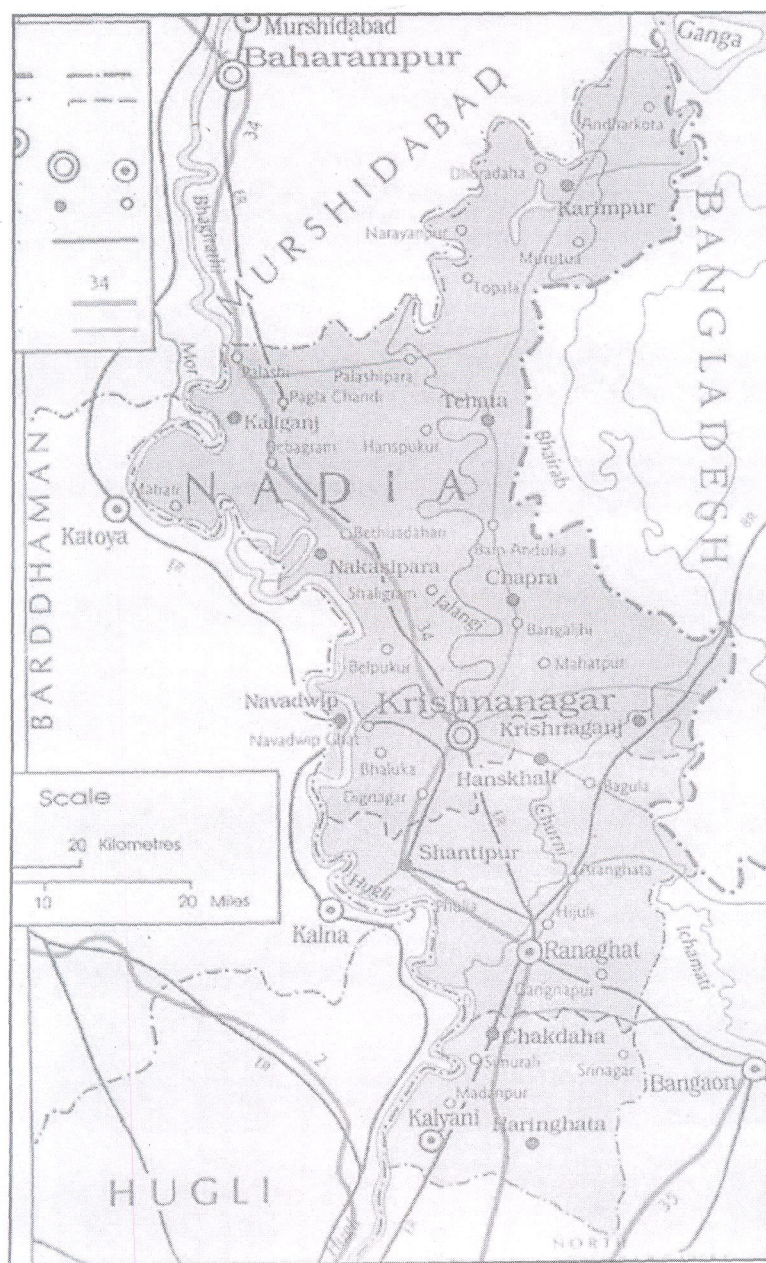
1. Awareness.
2. Eco – Friendliness.
3. Solid Waste Management.
4. Effective Use of Natural Resources.
5. Policy Framing and Decision Making

5.6 Scoring and Interpretation of the Data

To score the questionnaire, the investigator followed the 5 Point Likert Type Scale. The researcher had constructed the test, consisting of 50 items of both positive and negative type questions, the answer of which should be as per attitude of subjects participated in the survey. So, the highest number one could get would be 250.

5.7 The Empirical Evidence and Findings:-

5.7.1 District Nadia : Statistical Report :



Published by : Director, Bureau of Applied Economics & Statistics,
Government of West Bengal
Fax : (033) 2248 3032; E-Mail : baeswb@yahoo.com

Printed by : Silpabarta Printing Press Limited
(A Government of West Bengal Undertaking)
25 & 27 Canal South Road, Tangra Industrial Estate
Kolkata-700015, Phone : 2251 3031 / 5113

5.7.1.1 Geographical Area (square kilometres)

Village area	Town area	Total
3716.83	210.17	3927.00

5.7.1.2 Administrative Section*

Subdivision	Police Station	Blocks	Municipality	Gram panchayet Samity	Gram panchayet	Mouza	Town
2003	2002	2003	2003	2003	2003	2001	2001
4	19	17	10	17	187	1346	25

5.7.1.3 Population and Population Density (per square kilometres)*

Population			Population Density		
1981	1991	2001	1981	1991	2001
2964253	3852097	8604827	755	981	1173

5.7.1.4 Population According to Village and Town Areas*

Population					
1991			2001		
Total	Village area	Town area	Total	Village area	Town area
3852097	2980279	871818	4604827	3625308	979519

5.7.1.5 Population According to Sex*

1991			2001		
Male	Female	Male in every 100 female	Male	Female	Male in every 100 female
1989841	1862256	107	2366853	2237974	107

5.7.1.6 SC and ST Population, 2001*

SC			ST		
Total	Village area	Town area	Total	Village area	Town area
1365985	1128190	237795	113891	101911	11980

*Source: Nadia District Statistical Report (Vol-I, January 21,2008)

5.7.1.7 Literary Rate

The data on the Literary rate of different groups, in different areas an in different blocks of the district of Nadia had been presented in the tables 1,2 and 3 indicates the trend of women literacy in the district of Nadia.

5.7.1.8 Literacy Rate on Total Population in Nadia District

Category	Rate of literacy
Male	75.73%
Female	65.28%
total	70.51%

Source : Nadia District : Census 2011 data

The data available from the report of census 2011, indicated the percentage of women literacy was significantly lower than the male literacy. The study had been conducted in the four Gram panchayets and the four Municipalities in the district of Nadia. Now, Block wise literacy ratio had been presented in tabular form according to 2011 census.

5.7.1.9 Literate and Illiterates by Sex (Total Population) in Ranaghat Block 2**

	Persons	Male	Female
Literates	190460	107313	83147
Illiterates	108951	46396	62555
Literary rate	93	80	65
Graduate	6189	4789	1400

5.7.1.10 Scheduled Castes Literate and Illiterates by Sex**

	Persons	Male	Female
Literates	87289	50382	36907
Illiterates	53283	22078	31205
Literary rate	71.1	79.3	62.3
Graduate	2582	2121	461

5.7.1.11 Scheduled Tribes Literate and Illiterates by Sex**

	Persons	Male	Female
Literate	4015	2618	1397
Illiterates	7836	3325	4511
Literary rate	40.1	51.9	28.1
Graduate	18	15	3

**Source : Survey of Rural India : A Comparative Study of Gram Panchayet and Community Development Block by Dr. N. Seshagiri, published in 2013 in India, Gyan Publishing House, 23, Main Ansari Road, Daryagang, New Delhi – 110002, pp. 652-653.

5.7.1.12 Literate and Illiterates by Sex (Total Population) in Chakdaha Block***

	Persons	Male	Female
Literate	218605	124582	94023
Illiterates	121246	50700	70546
Literary rate	73	81	65
Graduate	8722	6518	2204

5.7.1.13 Scheduled Castes Literate and Illiterates by Sex***

	Persons	Male	Female
Literate	92103	53552	38551
Illiterates	59057	24361	34696
Literary rate	69.9	78.8	60.5
Graduate	2564	2018	546

5.7.1.14 Scheduled Tribes Literate and Illiterates by Sex***

	Persons	Male	Female
Literate	218605	124582	94023
Illiterates	121246	50700	70546
Literary rate	73	81	65
Graduate	8722	6518	2204

***Source : Survey of Rural India : A Comparative Study of Gram Panchayet and Community Development Block by Dr. N. Seshagiri, published in 2013 in India, Gyan Publishing House, 23, Main Ansari Road, Daryagang, New Delhi – 110002, pp. 156-157.

5.7.1.15 Literate and Illiterates by Sex (Total Population) in Haringhata Block****

	Persons	Male	Female
Literate	133641	77109	56532
Illiterates	74335	30928	43407
Literary rate	73	81	65
Graduate	5745	4273	1472

5.7.1.16 Scheduled Castes Literate and Illiterates by Sex****

	Persons	Male	Female
Literate	39123	23179	15944
Illiterates	25673	10343	15330
Literary rate	69.2	79.0	58.6
Graduate	1074	887	187

5.7.1.17 Scheduled Tribes Literate and Illiterates by Sex ****

	Persons	Male	Female
Literate	4758	3070	1688
Illiterates	5594	2251	3343
Literary rate	33.6	66.9	39.5
Graduate	73	55	18

****Source : Survey of Rural India : A Comparative Study of Gram Panchayet and Community Development Block by Dr. N. Seshagiri, published in 2013 in India, Gyan Publishing House, 23, Main Ansari Road, Daryagang, New Delhi – 110002, pp. 296-297..

5.7.1.18 Literate and Illiterates by Sex (Total Population) in Nabadwip**Block*******

	Persons	Male	Female
Literate	49864	29925	19939
Illiterates	55060	24238	30822
Literary rate	55	64	46
Graduate	1047	853	194

5.7.1.19 Scheduled Castes Literate and Illiterates by Sex*****

	Persons	Male	Female
Literate	7133	4270	2863
Illiterates	6992	2963	4029
Literary rate	58.2	67.7	48.2
Graduate	111	89	22

5.7.1.20 Scheduled Tribes Literate and Illiterates by Sex*****

	Persons	Male	Female
Literate	466	279	167
Illiterates	962	435	527
Literary rate	37.1	46.1	28.0
Graduate	1	1	0

*****Source : Survey of Rural India : A Comparative Study of Gram Panchayet and

Community Development Block by Dr. N. Seshagiri, published in 2013 in India, Gyan Publishing House, 23, Main Ansari Road, Daryagang, New Delhi – 110002, pp. 541-542.

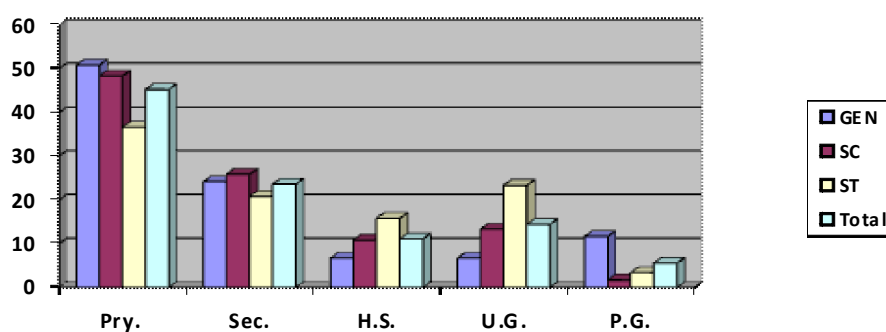
5.7.2 Educational Status

The educational background of the selected women villagers presented in the table below indicated that the status of women education would be a serious concern and it would require immediate attention.

5.7.2.1 Status of Education of the Selected Women Villagers (in Percentage)

Level castes	Pry.	Sec.	H.S.	U.G.	P.G.
GEN	50.83	24.17	6.67	6.67	11.66
SC	48.33	25.83	10.83	13.34	1.67
ST	36.67	20.83	15.83	23.33	3.34
Total	45.28	23.61	11.11	14.44	5.55

Fig. 5.1. Graphical presentation of the status of education of the selected women villagers (in percentage)



It would have been found from above table that the status of women education had been a serious concern because more than 50% women belong to

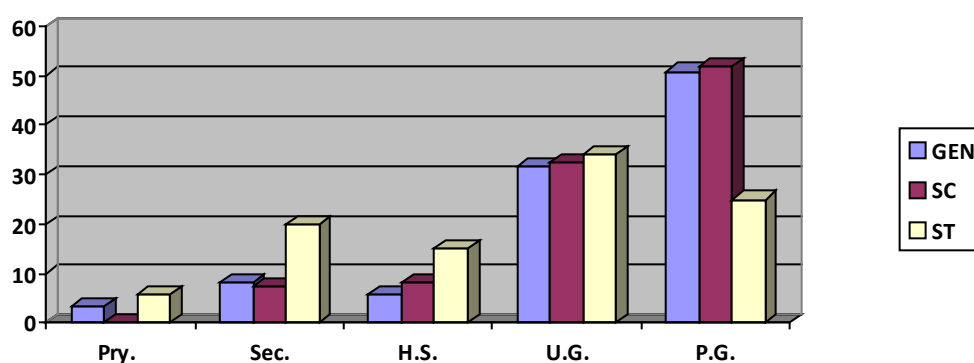
primary level, which would require immediate attention. On the other hand, very few percentage of SC/ST women belonged to post graduate level. To make the women more active, educational status should be improved.

5.7.2.2. Status of Education of the Selected Women in Service (in Percentage)

Category	Pry.	Sec.	H.S.	U.G.	P.G.
GEN	3.34	8.33	5.83	31.67	50.83
SC	0	7.5	8.33	32.5	51.67
ST	5.83	20.0	15.0	34.17	25.0

The above table indicated that the women in service were mostly belonged to U.G. and P.G. levels of education. It would be a good trend in the field of status of education. Not only the general category women but also the women belonged to SC/ST category engaged in service having higher educational background.

Fig. 5.2. Graphical presentation of the status of education of the selected women in service (in percentage)



The literature on participatory approaches underscored the quality, advancement, equality and integrative policymaking gains. On this basis the proponents of integrated work management claimed that stakeholders' participation to their local governance would help achieving integrated management. Here we could see those women, gender and equality would still create a wide gap.

Most women in developing countries would not have access to education, productive resources and other services. Such discrimination would hamper them not to earn and not to actively participate in socio-economic and political conditions. In order to solve the problem, women participation in every field would become a global agenda. It had been explained as customary gender values, rules and rights from the moral order of society that would restrict the access of women to social, political and legal institutions ultimately would create and perpetuate a vicious exclusionary cycle that would maintain gender inequalities. Scholars would have developed an 'environmentalism of the poor' which would show local people enthusiastically adopting sustainable development frameworks and developing social movements to counter the environmentally destructive activities of the corporate world, large-scale developers and the state.

The paradigms such as Gender equality, Poverty, Mortality and Birth Rates, Education, Health, Work and Employment, Access to Services, Land Rights, Decision Making Power – everything would depend upon the work and the livelihood of the members of a family, especially the women, the centre of family. So, the data of the workers in the survey area would have been presented below in the tabular form:

5.7.2.2.1 Distribution of Workers : Ranaghat Block-2*****

Modes of Work	Persons	Males	Females	WPR
Cultivators	23819	22501	1309	24.51
Agricultural labour	28259	24534	3725	29.09
Household industries	9759	4627	5132	10.05
Other works	35310	29994	5316	36.35
Main workers	87121	76653	10468	89.69
Marginal workers	10017	5003	5014	10.31
Total workers	97138	81656	15482	

5.7.2.2.2 Distribution of Workers : Chakdaha Block*****

Modes of Work	Persons	Males	Females	WPR
Cultivators	22094	20285	1809	19.3
Agricultural labour	28328	24022	4303	24.74
Household industries	8353	3497	4856	7.29
Other works	55732	46732	9000	48.67
Main workers	99752	87389	12363	87.12
Marginal workers	14752	7147	7605	12.88
Total workers	114504	94536	19968	

5.7.2.2.3 Distribution of Workers : Haringhata Block*****

Modes of Work	Persons	Males	Females	WPR
Cultivators	14780	13525	1255	19.84
Agricultural labour	22147	17912	4235	29.72
Household industries	3618	1548	2070	4.86
Other works	33968	27362	6606	45.59
Main workers	61473	54719	6606	45.59
Marginal workers	13040	5628	7412	17.5
Total workers	74513	60347	14166	

5.7.2.2.4 Distribution of Workers : Nabadwip Block*****

Modes of Work	Persons	Males	Females	WPR
Cultivators	4706	4572	134	11.24
Agricultural labour	6450	6036	414	15.41
Household industries	6914	3049	3865	16.51
Other works	23798	17204	6594	56.84
Main workers	37176	29478	7986	88.79
Marginal workers	4692	1383	3309	11.21
Total workers	41868	30861	11007	

*****Source: Survey of rural India: a comparative study of gram panchayet and community development block by Dr. N. Seshagiri, Published in 2013 in India by Gyan Publishing House, 23, Main Ansari Road, Daryagang, New Delhi, 110002. Chakdaha Block- pp 156-157, Haringhata Block-pp 296-297, Nabadwip Block- pp 541-542, Ranaghat Block2- pp 652-653

5.7.2.3 Case Studies

Here are two cases, cited from the samples of the said study to sympathize with them and their families. What can solve their problems?

Environment, Education or participation in Environmental Management?

5.7.2.3.1 Case Study -1

Mukti is a single mother who is always struggling to raise her 5-year old daughter Maya. Mukti and Maya live in Chapra, one of the slums in Krishnanagar subdivision. Mukti used to work as a casual worker in the industrial area near the slum. Work is not regular. She used to earn Rs. 130 per day for the hard work wherever she has been hired. She can hardly find 100 days jobs in a year. But she hates her own life-style and eagers to see her daughter in a clean and green society. How? It's a big question not only to Mukti to get freedom but to the entire society too.

5.7.2.3.2 Case Study -2

Ms. Anjali Bardhan, 28 year old graduate is living in Chawk village at Nabadwip subdivision in Nadia district with her husband, child and in-laws. She has been working in a local Bakery for 6 years and has monthly earning of Rs. 1500. Her husband, a driver met road accident and doctors recommended complete bed rest. She took a loan for treatment of her husband and to manage the house. Need to repay the loan worsened her situation. Therefore, she had to start looking for a better job outside in spite of community tradition. What did she do? She also wanted a clean, green and fresh living. How?

5.7.2.3.3 Case Study : Interpretation

The implications of the ideas “Women Participation” and “Environmental Sustainability” are matter of contemplation of late. “Women Participation in environmental management” is a vast concept. Though there is no benchmark to measure the effectiveness of women participation in society, it means different to various hierarchical strata. “Women Participation” not only means the growing consciousness among women to seize the rights , the power within to discover the freedom in every aspect of life and face the enlightened day but it indicates at its justification also. On the other hand Environmental Sustainability refers to the advancement of civilization without hampering the environment and the ecology. After a prolonged torture upon environment, people become aware of its evil impact. To maintain the sustainability of environment, the role of women is vast.

Women and their role in household management can be categorized into two sections – a) Village women and their household management and b) Urban women and their household management. In spite of all the categories women, in general, are the sources of reproduction and yet are undervalued. In rural areas the condition of women is very poor. They start their morning with cleaning their houses and home adjoining areas. Child-care is a part of their life, yet they are not much conscious about child and their upbringing, their health and hygiene, their food habit etc. But they follow the precepts available to them and the advice given to them by their in-laws. But in recent times, due to repeated campaigns in rural areas the women grow in themselves a tendency to send their girl child to schools. Earlier women of a family neglect the girl child most and debar them from the light of education. It is the women who almost all the time cook food. And for this reason they sometimes have to walk a long way to collect the logs, dry weeds etc. They help

their spouse in farming, in keeping livestock, in washing clothes etc. All these are the result of gender division of labour. But it is not the end. The labour given by the women in these activities is not paid and thereby is not considered as 'work'. In wretched families and even in the families headed by women, they are engaged in different types of 'work' such as knitting, handcrafts, serving in rich families, fishing, selling vegetable etc. to help their family financially. So these women are not only productive and reproductive but are important pillars of their household and environment also. If we turn our eyes to the women in the urban area, we find the same picture in a modified form and here the role of women in their household management is little different. Urban women are entirely responsible for their domestic work, although they can rely to a greater extent, on paid assistant or unpaid family members. Like the rural women, they too have to take care of their child their sanitation, safety of health, their education etc. But they are aware of the socialization of their children too. They play a great role in community development, conflict management of their society. Besides, urban women, on a large scale, are engaged in different types of 'work' - Home-based or Office-based – to earn money so that they can be financially independent to have a well off family. For this reason the term "Working Lady" has come into use in our society. The responsibility of "Working Lady" may range from a maid servant to an IT professional. Thereby urban women are able to take major roles in family festivals, in family marriages, and contribute to the expenditure too. Therefore in spite of the misogynistic attitude of the male dominated society it is the women who, with their innate love, care, compassion, manage their household and transform it into a peaceful habitat. The environmental awareness of both village and urban women is shown in this research work.

5.8 Descriptive Statistics of Different Groups

The mean, median and standard deviation of the scores of the women in the women participation in environmental management questionnaire has been shown in the following tables.

Table 5.1. Descriptive statistics of data between rural students age upto 25 and rural students age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Students	Upto 25	130	64.38	69.00	21.41
		Above 25	125	66.28	72.00	23.40

Table 5.2. Descriptive statistics of data between rural housewives age upto 25 and rural housewives age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Housewives	Upto 25	125	64.24	69.00	20.78
		Above 25	125	65.93	71.00	22.11

Table 5.3. Descriptive statistics of data between rural policy makers and service holders age upto 25 and rural policy makers and service holders age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Policy makers and service holders	Upto 25	125	64.51	70.00	21.84
		Above 25	125	67.21	74.00	22.70

Table 5.4. Descriptive statistics of data between urban students age upto 25 and urban students age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Urban	Students	Upto 25	130	63.51	69.00	20.35
		Above 25	135	67.01	74.00	22.48

Table 5.5. Descriptive statistics of data between urban housewives age upto 25 and urban housewives age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Urban	Housewives	Upto 25	125	64.38	72.00	22.20
		Above 25	135	65.92	73.00	21.41

Table 5.6. Descriptive statistics of data between urban policy makers and service holders age upto 25 and urban policy makers and service holders age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Urban	Policy makers and service holders	Upto 25	125	72.46	80.00	24.88
		Above 25	130	68.35	77.00	22.95

Table 5.7. Descriptive statistics of data between rural students age upto 25 and urban students age upto 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Students	Upto 25	130	64.38	69.00	21.41
Urban		Upto 25	130	63.51	69.00	20.35

Table 5.8. Descriptive statistics of data between rural students age above 25 and urban students age above 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Students	Above 25	125	66.28	72.00	23.40
Urban		Above 25	135	67.01	74.00	22.48

Table 5.9. Descriptive statistics of data between rural housewives age upto 25 and urban housewives age upto 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Housewives	Upto 25	125	60.24	65.00	20.78
Urban		Upto 25	125	66.38	72.00	22.20

Table 5.10. Descriptive statistics of data between rural housewives age upto 25 and urban housewives age upto 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Housewives	Above 25	125	65.93	71.00	22.11
Urban		Above 25	135	65.92	73.00	21.41

Table 5.11. Descriptive statistics of data between rural policy makers and service holders age upto 25 and urban policy makers and service holders age upto 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Policy Makers and Service Holders	Upto 25	125	64.51	70.00	21.84
Urban		Upto 25	125	72.46	80.00	24.88

Table 5.12. Descriptive statistics of data between rural policy makers and service holders age upto 25 and urban policy makers and service holders age upto 25.

Area	Socio Economic Status	Age	N	Mean	Median	Standard Deviation
Rural	Policy Makers and Service Holders	Above 25	125	67.21	74.00	22.70
Urban		Above 25	130	68.35	77.00	22.95

5.9 Testing of the Hypotheses

The hypotheses had been tested through inferential statistics by applying ‘t-test’ given below applied on both rural and urban women on five dimensions of participation in environmental management with the following formula-

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 and N_2 = Sizes of the samples.

Hypothesis-1:

There is no significant difference of mean in Rural Students between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples i.e. No. of Rural Students age group upto 25.

N_2 = Sizes of the samples i.e. No. of Rural Students age group above 25.

Table-1

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
130	64.38	21.41	125	66.28	23.40	253	0.678	0.498	1.90	2.81

Not significant

Therefore, the obtained 't' value is 0.678 and the degree of freedom for use is $[(130+125)-2] = 253$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 253. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-2:

There is no significant difference of mean in Rural Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples i.e. No. of Rural Housewives between age group upto 25.

and N_2 = Sizes of the samples i.e. No. of Rural Housewives between age group above 25.

Table-2

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	60.24	20.78	125	65.93	22.11	248	2.096	0.037	5.69	2.71

Significant at 0.05 level.

Therefore, the obtained 't' value is 2.096 and the degree of freedom for use is $[(125+125)-2]=248$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 253. Obtained 't' value is more than the tabled 't'-value. So obtained 't'-value is significant at 0.05 level. Therefore, the hypothesis is rejected.

Hypothesis-3:

There is no significant difference of mean in Rural Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Size of the samples i.e. No. of Rural Policy Makers and Service Holders age group upto 25.

and N_2 = Size of the samples i.e. No. of Rural Policy Makers and Service Holders age group above 25.

Table-3

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	64.51	21.84	125	67.21	22.70	248	.957	340	2.70	2.82

Not significant.

Therefore, the obtained 't' value is .957 and the degree of freedom for use is $[(125+125)-2]=248$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 248. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-4:

There is no significant difference of mean in Urban Students between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Size of the samples i.e. No. of Urban Students age group upto 25.

N_2 = Size of the samples i.e. No. of Urban Students age group above 25.

Table-4

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
130	63.51	20.35	135	67.01	22.48	263	1.327	0.186	3.50	2.64

Not significant.

Therefore, the obtained 't' value is 1.327 and the degree of freedom for use is $[(130+135)-2] = 263$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 263. Obtained 't' value is less than the tabled 't' -value. So obtained 't' -value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-5:

There is no significant difference of mean in Urban Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Size of the samples i.e. No. of Urban Housewives age group upto 25.

N_2 = Size of the samples i.e. No. of Urban Housewives age group above 25.

Table-5

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	66.38	22.20	135	65.92	21.41	258	0.169	0.866	0.46	2.71

Not significant.

Therefore, the obtained 't' value is .169 and the degree of freedom for use is $[(125+135)-2]=258$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 258. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-6:

There is no significant difference of mean in Urban Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Size of the samples i.e. No. of Urban Policy makers and service holders age group upto 25.

And N_2 = Size of the samples i.e. No. of Urban Policy makers and service holders age group above 25.

Table-6

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	72.46	24.88	130	68.35	22.95	235	1.369	0.172	4.10	3.00

Not significant.

Therefore, the obtained 't' value is 1.369 and the degree of freedom for use is $[(125+130)-2]=253$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 253. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-7:

There is no significant difference of mean in age upto 25 between Rural and Urban Students with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples of Rural Students age upto 25.

and N_2 = Sizes of the samples of Urban Students age upto 25.

Table-7

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
130	64.38	21.41	130	63.51	20.35	258	0.335	0.738	0.87	2.59

Not significant.

Therefore, the obtained 't' value is .335 and the degree of freedom for use is $[(130+130)-2]=258$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 258. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-8:

There is no significant difference of mean in age upto 25 between Rural and Urban Housewives with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples of Rural Housewives age upto 25.

and N_2 = Sizes of the samples of Urban Housewives age upto 25.

Table-8

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	60.24	20.78	125	66.38	22.20	248	2.256	0.025	6.14	2.72

Significant at 0.05 level.

Therefore, the obtained 't' value is 2.256 and the degree of freedom for use is $[(125+125)-2]=248$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 248. Obtained 't' value is more than the tabled 't'-value. So obtained 't'-value is significant at 0.05 level. Therefore, the hypothesis is rejected.

Hypothesis-9:

There is no significant difference of mean in age upto 25 between Rural Policy Makers and Service Holders and Urban Policy Maker and Service Holder with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples of Rural Policy Makers and Service Holders age upto 25.

and N_2 = Sizes of the samples of Urban Policy Makers and Service Holders age upto 25.

Table-9

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	64.51	21.84	125	72.46	24.88	248	2.683	.008	7.94	2.96

Significant at 0.01 level.

Therefore, the obtained 't' value is 2.256 and the degree of freedom for use is $[(125+125)-2]=248$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 248. Obtained 't' value is more than the tabled 't'-value. So obtained 't'-value is significant at 0.05 level. Therefore, the hypothesis is rejected.

Hypothesis-10:

There is no significant difference of mean in age above 25 between Rural Students and Urban Students with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples of Rural Students in age above 25.

and N_2 = Sizes of the samples of Urban Students in age above 25.

Table-10

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	64.51	21.84	125	72.46	24.88	248	2.683	0.008	7.94	2.96

Not significant.

Therefore, the obtained 't' value is .256 and the degree of freedom for use is $[(125+135)-2]=258$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 258. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-11:

There is no significant difference of mean in age above 25 between Rural Housewives and Urban Housewives with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation for Second Group

N_1 = Sizes of the samples of Rural Housewives in age above 25.

and N_2 = Sizes of the samples of Urban Housewives in age above 25.

Table-11

N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	65.93	22.11	135	65.92	21.41	258	0.004	0.997	0.01	2.70

Not significant.

Therefore, the obtained 't' value is .004 and the degree of freedom for use is $[(125+135)-2]=258$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 258. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

Hypothesis-12:

There is no significant difference of mean in age above 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service Holders with respect to participation in environmental management.

Here the samples are large and independent and Kurtosis is approximately normal. So the following formula has been applied.

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where, M_1 = for Second Group

N_1 = Sizes of the Mean for the First Group

M_2 = Mean for the Second Group

σ_1 = Standard deviation for First Group

σ_2 = Standard deviation samples of Rural Policy Makers and Service Holders in age above 25.

and N_2 = Sizes of the samples of Urban Policy Makers and Service Holders in age above 25.

Table-12

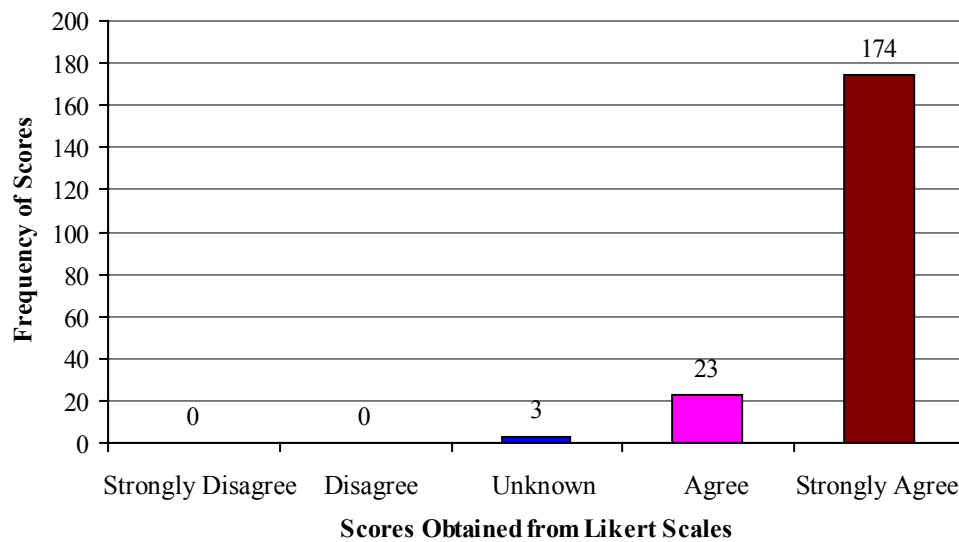
N_1	M_1	SD_1	N_2	M_2	SD_2	df	t-value	Sig. (2 tailed)	Mean Difference	Std.Error difference
125	67.21	22.70	130	68.35	22.95	253	0.401	0.689	1.15	2.86

Not significant.

Therefore, the obtained 't' value is .401 and the degree of freedom for use is $[(125+130)-2]=253$. This is a two-tailed test. The tabled 't' value is 1.65 when degree of freedom is 253. Obtained 't' value is less than the tabled 't'-value. So obtained 't'-value is not significant at 0.05 level. Therefore, the hypothesis is retained.

5.7 Graphical Presentation and Interpretation

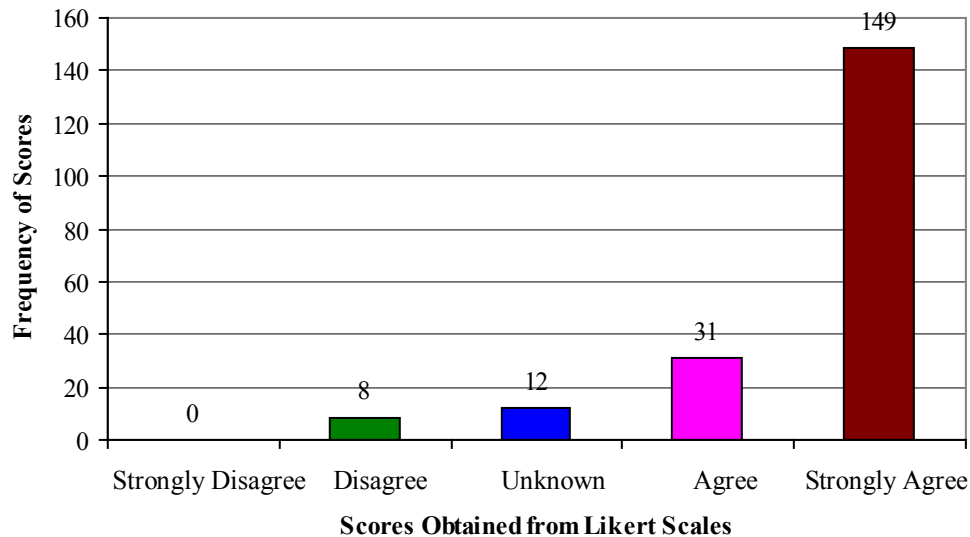
Item 1: The natural elements (tree, water, soil, air, etc.) are necessary for our living directly or indirectly



Environmental Management Graph, Fig. 1

This was the graph of a positive item. 87% of women both from rural and urban areas strongly believed that the natural elements (tree, water, soil, air etc.) were necessary for living directly or indirectly. 11.5% of women moderately accepted the view. 1.5% of women was silent regarding the matter. None disagreed the importance of natural elements.

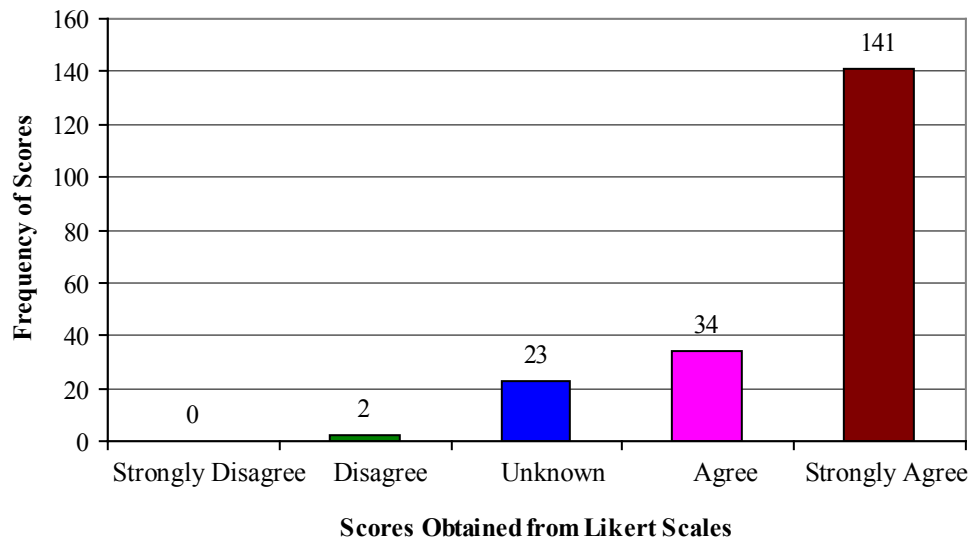
Item 2: If the numbers of trees are reduced, it is difficult for us to live.



Environmental Management Graph, Fig. 2

This was the graph of a positive item. 74.5% women from both rural and urban areas strongly believed that the loss of the number of trees would make our life miserable. 15.5% women had the moderate belief that if the numbers of trees were reduced, it was very difficult for lives to live. Only 6% women bore the notion that the existence of lives had no connection with the trees and 4% of women had the notion that environmental sustainability did not depend on women.

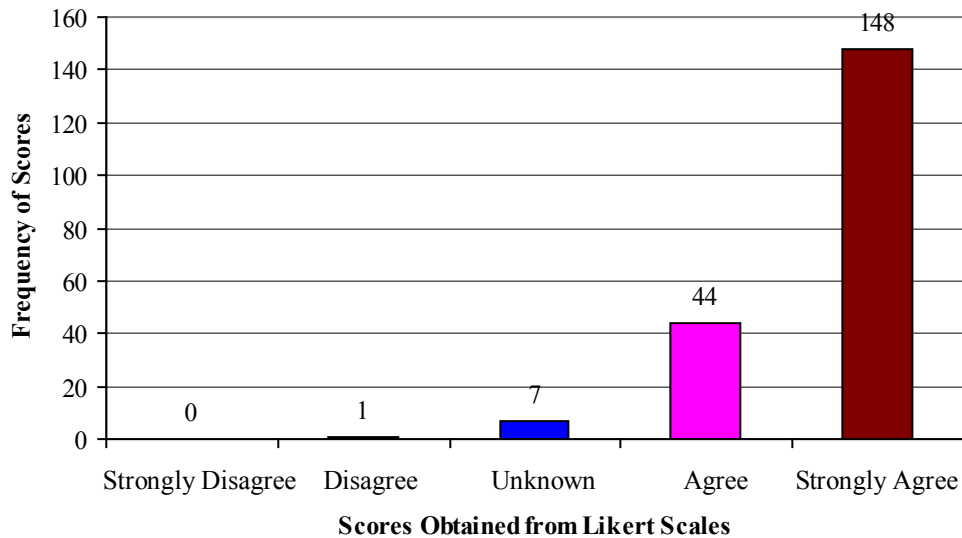
Item 3: The amount of rainfall will lessen if the numbers of trees are reduced.



Environmental Management Graph, Fig. 3

This was the graph of a positive item. 70.5% women from both rural and urban areas strongly believed that the amount of rainfall would lessen if the numbers of trees were reduced. That was very satisfactory. Only 17% of women had the moderate belief that the amount of rainfall would lessen if the numbers of trees were reduced. It was alarming that 11.5% women paid no heed to the relationship between less rainfall and reducing the number of trees. Only 2% women had the notion that rainfall had no effect on environment.

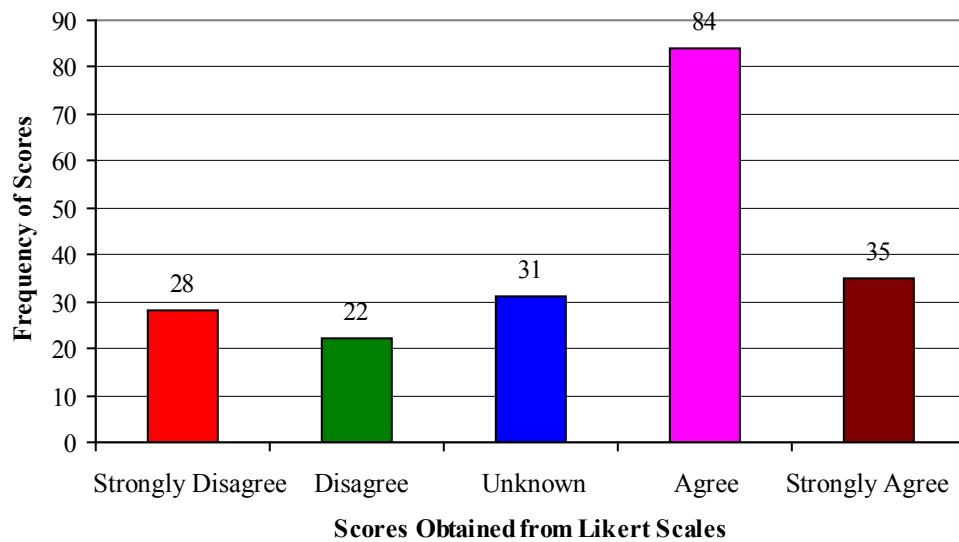
Item 4: You will plant new trees, if you are compelled to cut old ones.



Environmental Management Graph, Fig. 4

This was the graph of a positive item. 74% of women from both rural and urban areas strongly believed that compelling to cut old trees might ensure the planting new trees. This result proved women's affection, attachment and attention to trees. Only 22% of women had the moderate notion that compelling to cut old trees might ensure the planting new trees. Only 3.5% of women paid no heed to deforestation. Only 0.5% of women bore the notion that felling of trees had no effect in increasing environmental sustainability.

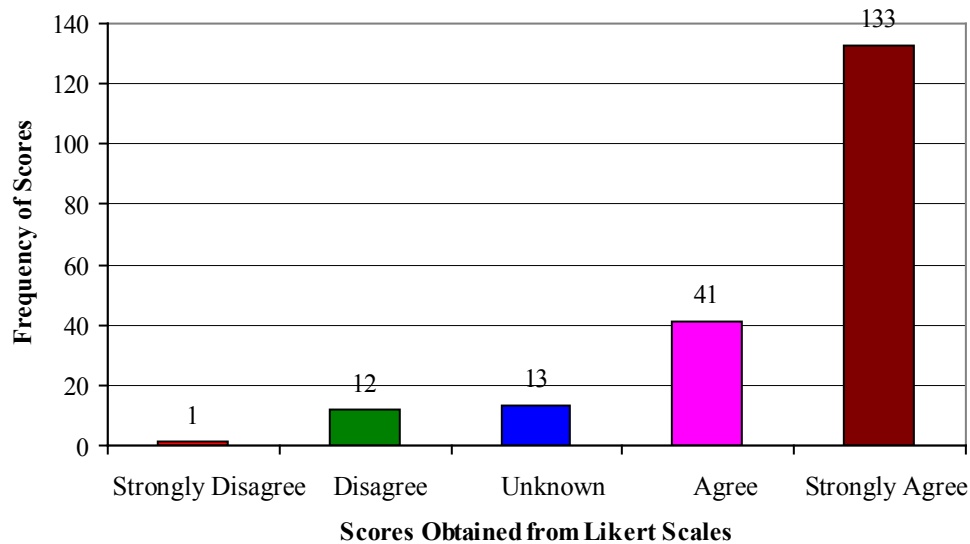
Item 5: There is no harm in washing clothes in pond.



Environmental Management Graph, Fig. 5

This was the graph of a negative item. 14% of women strongly disagreed the activity like washing clothes in pond. 11% of women moderately believed that washing clothes in pond had a bad impact on environment. 15.5% of women paid no heed to this unhealthy activity. 42% of the women moderately believed that there was no harm in washing clothes in pond. 17.5% of the women strongly believed that there was no harm in washing clothes in pond. That was very alarming.

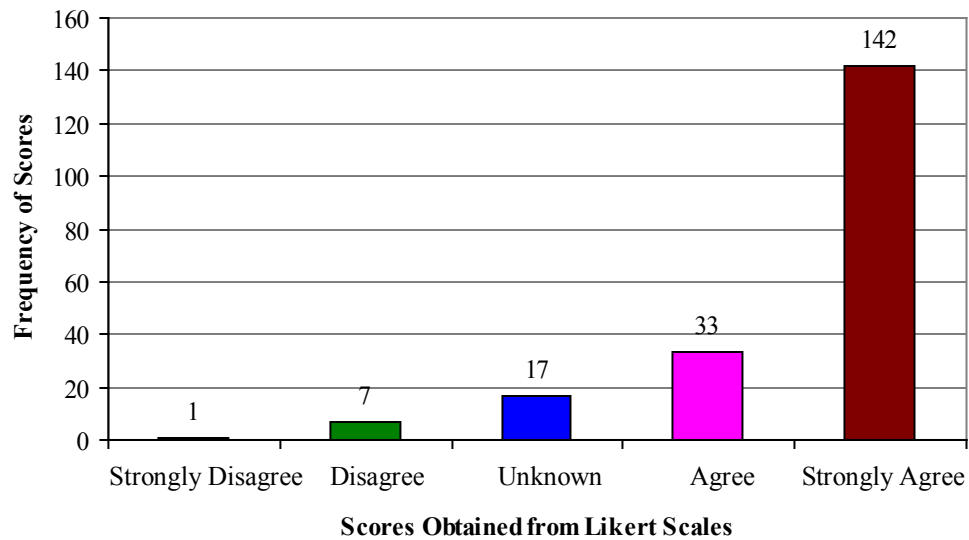
Item 6: The use of bio-fertilizer in cultivation does not pollute but enhances fertility.



Environmental Management Graph, Fig. 6

This was the graph of a positive item. 66.5% of women both from rural and urban areas strongly believed that the use of bio-fertilizers in cultivation did not pollute fertility rather bio-fertilizer would enhance the fertility of the soil. This result showed women's knowledge about farming. 20.5% of women moderately believed the fact that the use of bio-fertilizer in cultivation did not pollute land rather enhanced the said fertility. 6.5% of women paid no heed to the relation between use of bio-fertilizer and enhancement of fertility. 25% of women opposed the fact and they were of the opinion that the use of biofertilizer might pollute the soil instead of enhancing the fertility.

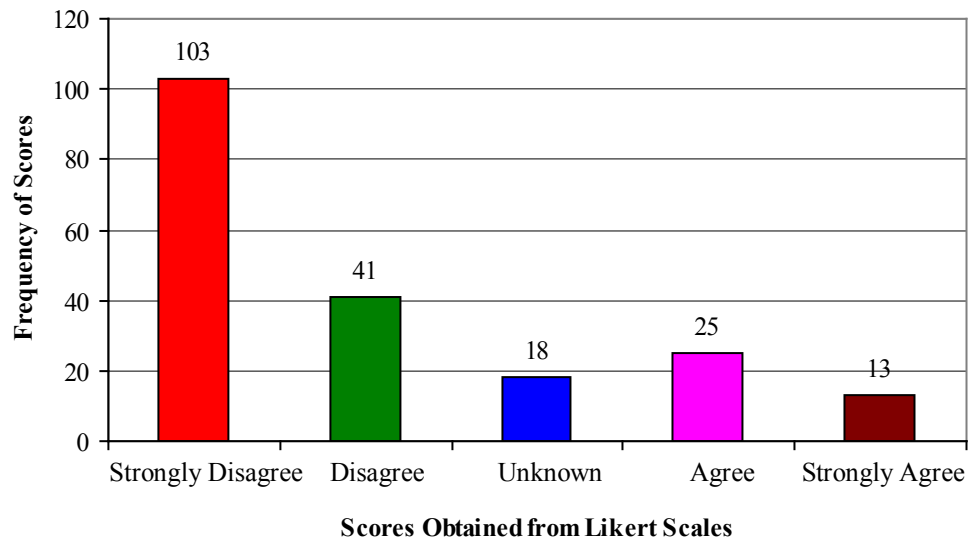
Item7: If we visit any natural place or sanctuary, we should abide by the rules.



Environmental Management Graph, Fig. 7

This was the graph of a positive item. 71% of women strongly believed that they should abide by the rules at any natural place or sanctuary. This result was satisfactory and showed women's love for nature and natural animals and their habitat. Only 16.5% of women moderately believed that rules could maintain any natural place or sanctuary. 8.5% of women paid no heed to the fact. Only 4% of women were of the notion that there was no relationship between visiting to any natural place or sanctuary and abiding by the rules.

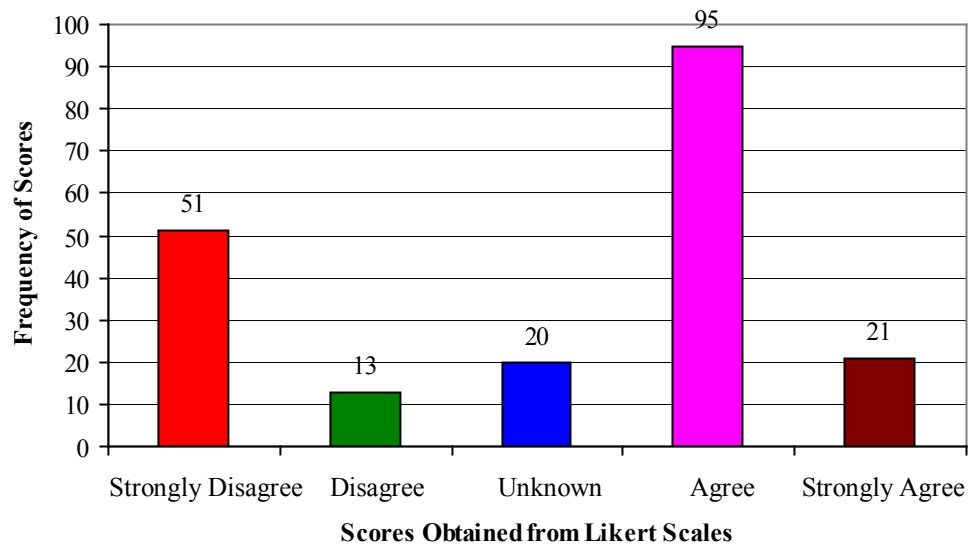
Item 8: We can bathe well if there is a clean pond beside our house.



Environmental Management Graph, Fig. 8

This was the graph of a negative item. 51.5% of women strongly believed that bathing in a clean pond should not be allowed. This result was satisfactory and showed women's love for nature. 20.51% of women moderately believed that view. 9% of women paid no heed to the fact. Only 12.5% of women were of the notion that bathing would be well if there was a clean pond beside the house. 13% of women strongly believed the same.

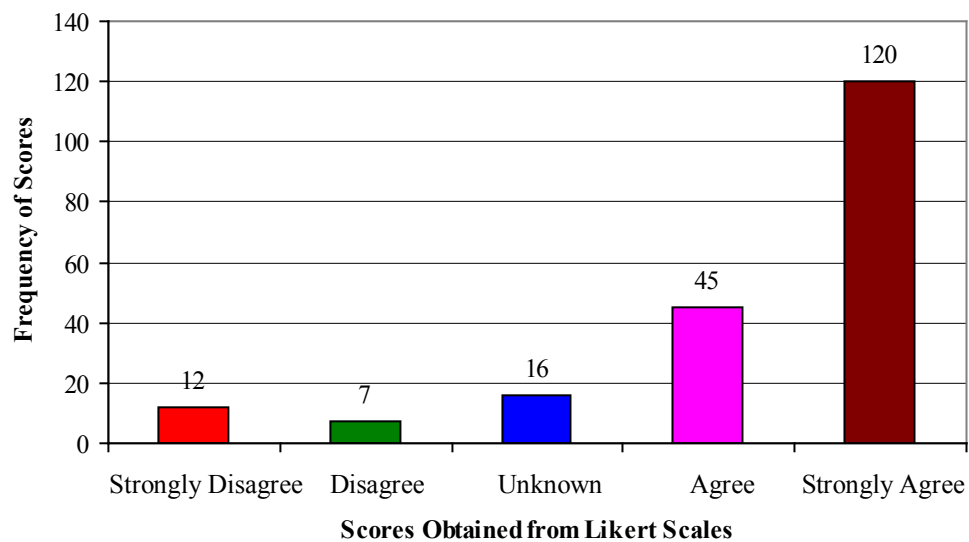
Item 9: You dispose the garbage of your house in adjacent road or pond.



Environmental Management Graph, Fig. 9

This was the graph of a negative item. 25.5% of women from both rural and urban areas strongly against the disposal of the house garbage in adjacent road or pond. 6.5% of women had moderately believed the above notion. 10% of women paid no heed to the matter. What is more alarming that 47.5% of women strongly agreed with the view that disposal of the house garbage in adjacent road or pond might be done.

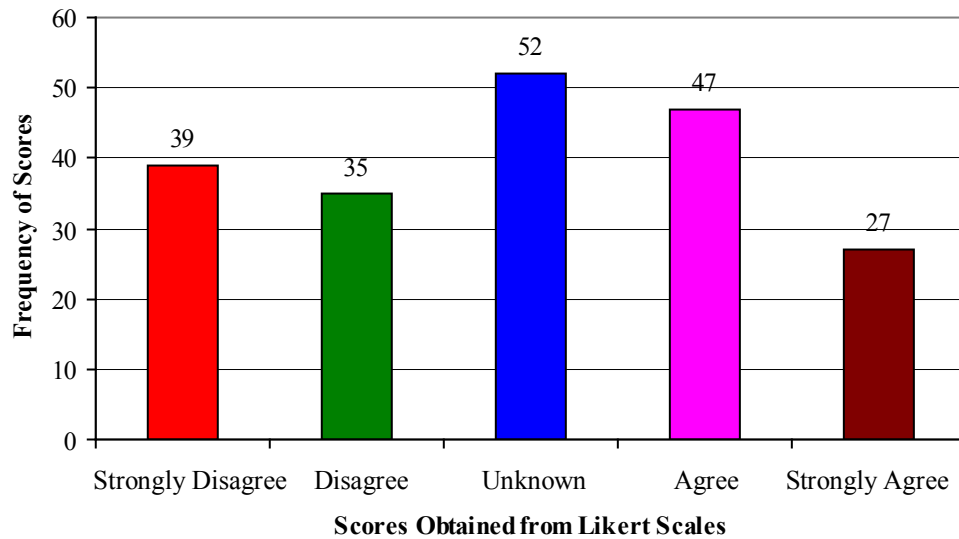
Item 10 : We should drink purified water.



Environmental Management Graph, Fig. 10

This was the graph of a positive item. 60% of the women from both rural and urban areas strongly believed that they should drink purified water. This result was satisfactory as they were aware of the health of them and their families. 22.5% of women moderately believed that they should drink purified water. Only 8% of women paid no heed to drink purified water. 3.5% of women moderately disagreed with the fact that they should drink purified water. 6% of women strongly believed that drinking purified water had no impact on healthy living.

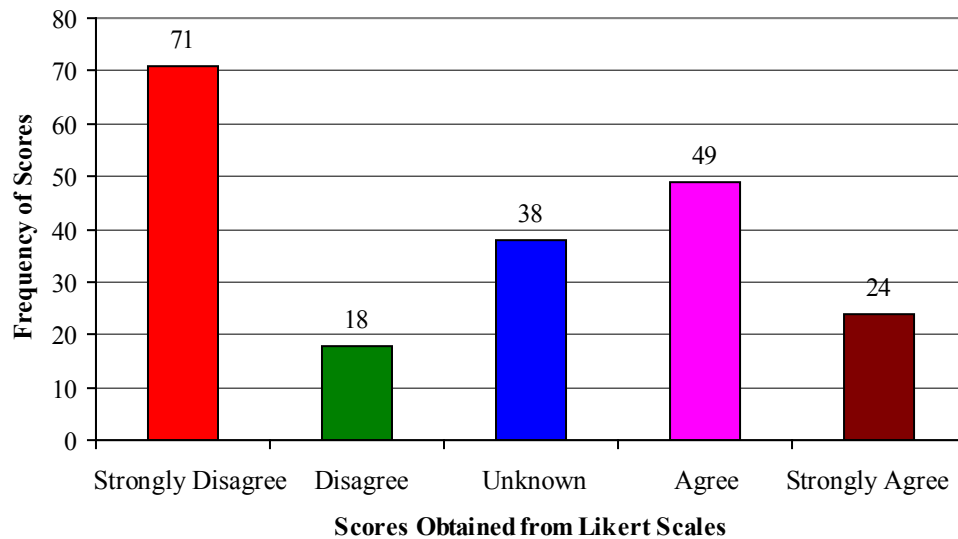
Item 11: New houses made of bricks are essential to decorate the environment.



Environmental Management Graph, Fig. 11

This was the graph of a negative item. 17.5% of women moderately believed that new houses made of bricks were not essential to decorate the environment. 26% of women paid no heed to the fact that new houses made of bricks were essential to decorate the environment. The percentage was alarming. 23.5% of women strongly believed that new houses made of bricks were essential to decorate the environment. 13.5% of women moderately believed that new houses made of bricks were essential to decorate the environment.

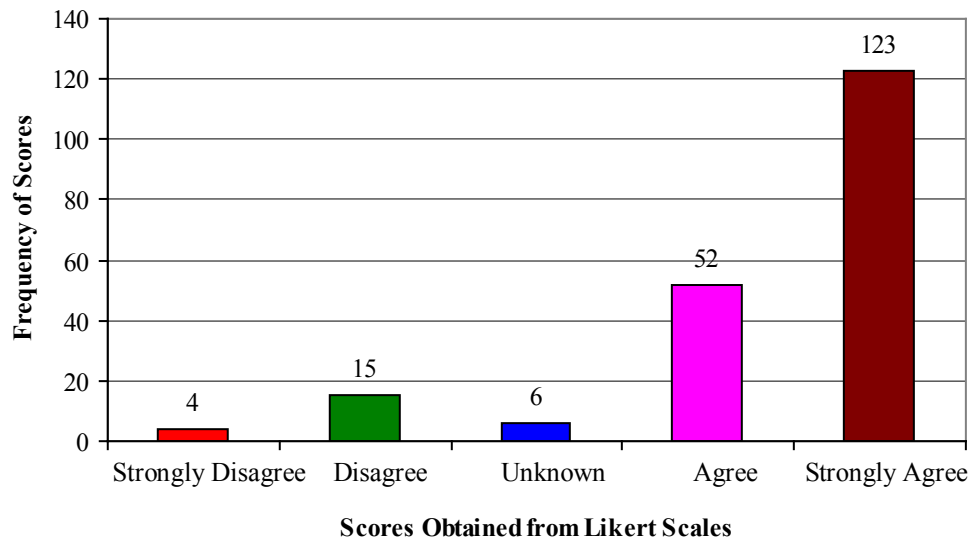
Item 12: We have nothing to do if a tree dies.



Environmental Management Graph, Fig. 12

This was the graph of a negative item. 35.5% of women from both rural and urban areas strongly believed that they took active measures when a tree was going to die. 9% of women moderately believed that they also took some measures. 19% of women paid no heed to the fact. 24.5% of women moderately believed that they had nothing to do if a tree was going to die. 12% of women strongly believed that they also had nothing to do if a tree was going to die.

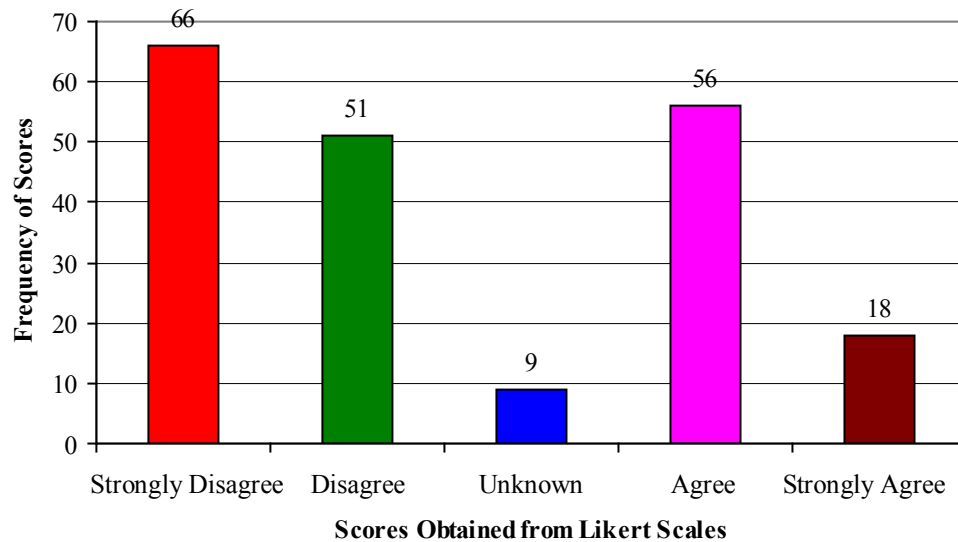
Item 13 : You use bamboo or cane basket to keep fruits.



Environmental Management Graph, Fig. 13

This was the graph of a positive item. 61.5% of women from both rural and urban strongly believed that they should use bamboo or cane basket to keep fruits. This result showed the eco-friendly attitude of women. 26% of women believed moderately that they should use bamboo or cane basket to keep fruits. Only 3% of women paid no heed to it. 7.5% of women moderately believed that they should use bamboo or cane basket to keep fruits. Only 2% of women strongly believed that they should use bamboo or cane basket to keep fruits.

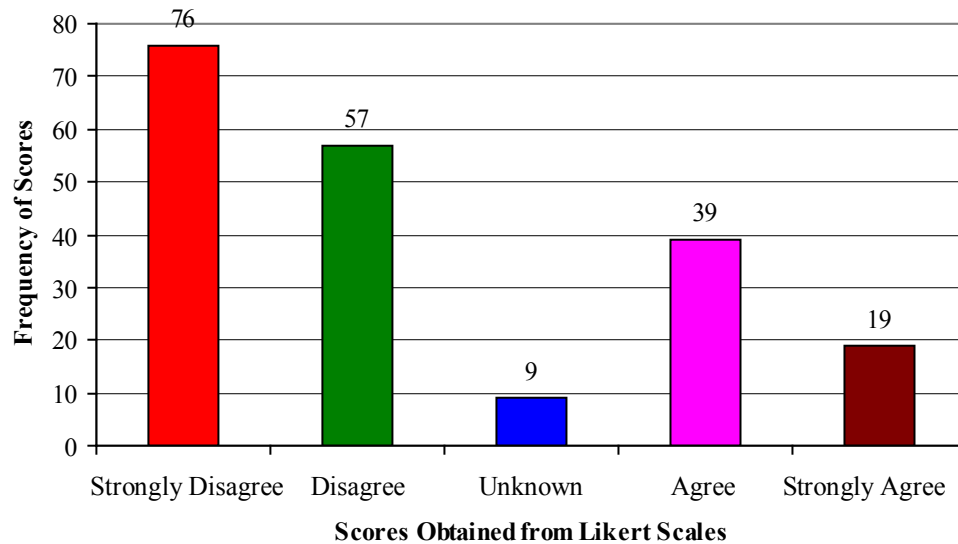
Item 14: You use plastic mat to sleep on floor.



Environmental Management Graph, Fig. 14

This was the graph of a negative item. 33% of women from both rural and urban areas strongly believed that using plastic mat to sleep of especially on floor might have an ill effect on our health. 25.5% of women moderately believed that matter. Only 4.5% of women remained silent over the matter. 28% of women moderately believed that they could easily use plastic mat to sleep on floor. Only 5% strongly believed the fact that plastic mat for sleeping could be used.

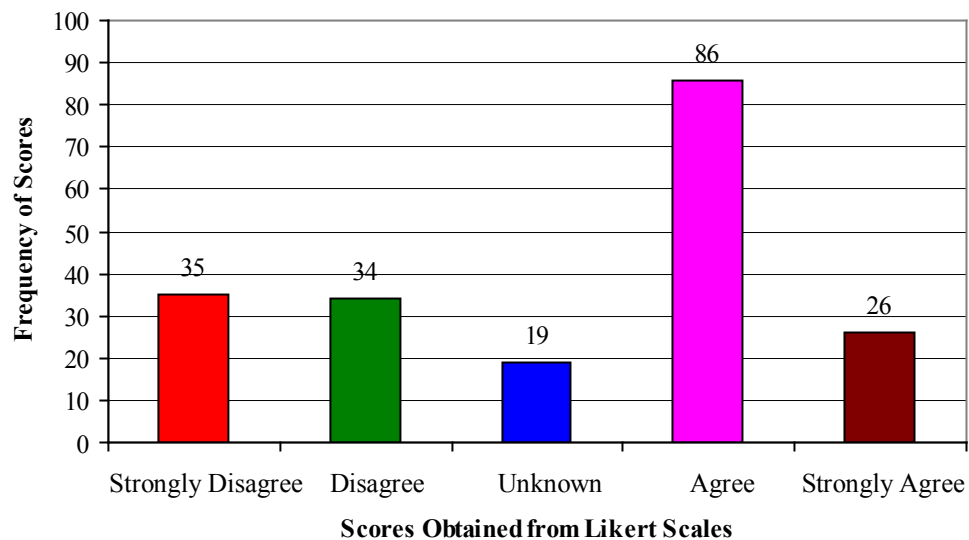
Item 15: You use fashionable thermocol dishes in household occasions.



Environmental Management Graph, Fig. 15

This was the graph a negative item. 38% of women from both rural and urban areas strongly believed that fashionable thermocol dishes in household occasions might be banned. 28.5% of women moderately believed the fact that they should not use fashionable thermocol dishes in household occasions. The percentage of women who were eco-friendly by nature showed satisfactory result. Only 4.5% of women had no voice about the matter. 19.5% of women moderately believed that fashionable thermocol dishes in household occasions might be used. 9.5% of women believed that notion strongly.

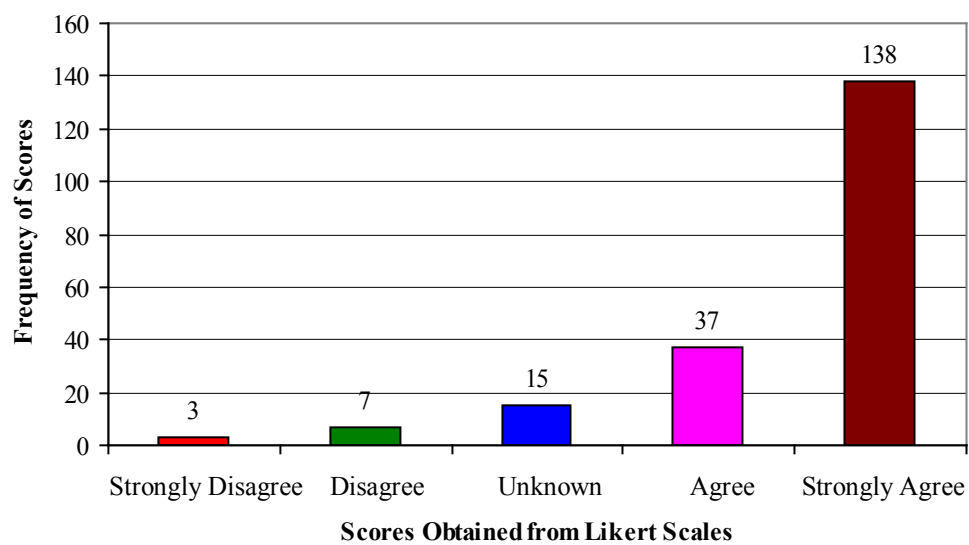
Item 16: You like plastic bags for shopping.



Environmental Management Graph, Fig. 16

This was the graph of a negative item. This graph had shown the real picture that was not only alarming but dangerous for environment as well as society. 43% of women from both rural and urban areas moderately believed that they would like plastic bags for shopping. Only 13% of women strongly believed the matter. 9.5% of women had no voice over the plastic issue. 17% of women moderately believed that they disliked plastic bags for shopping. The same percentage of women strongly believed that they also disliked the plastic bags for shopping from their heart.

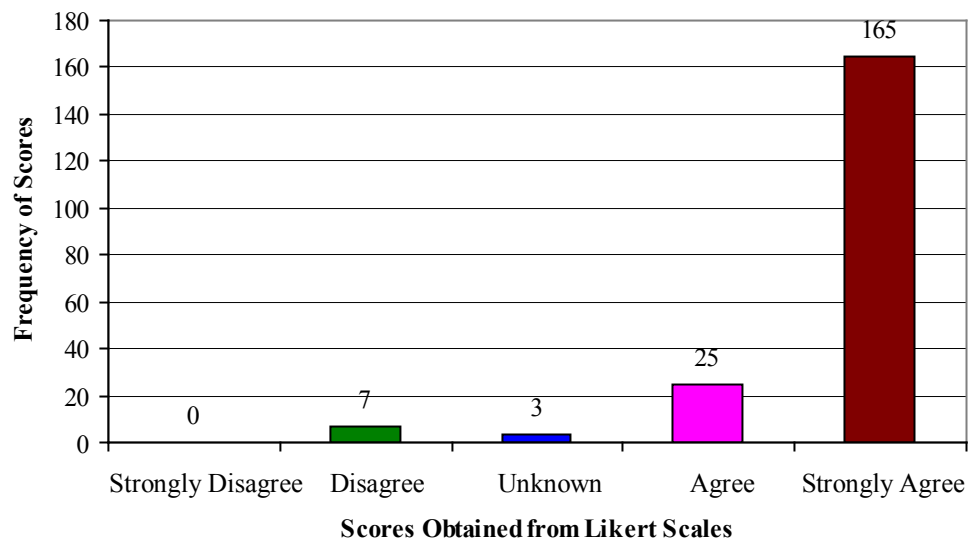
Item 17: To use gas instead of bio-fuel as coal, wood comparatively pollute nature less.



Environmental Management Graph, Fig. 17

This was a graph of positive item. 69% of women from both rural and urban areas strongly believed that gas instead of bio-fuel as coal, wood comparatively pollute nature less. 18.5% of women moderately accepted the notion. Only 7.5% of women had no opinion over the matter. 3.5% of women moderately believed the fact that gas instead of bio-fuel as coal, wood did not pollute nature less. 1.5% of women strongly believed the notion.

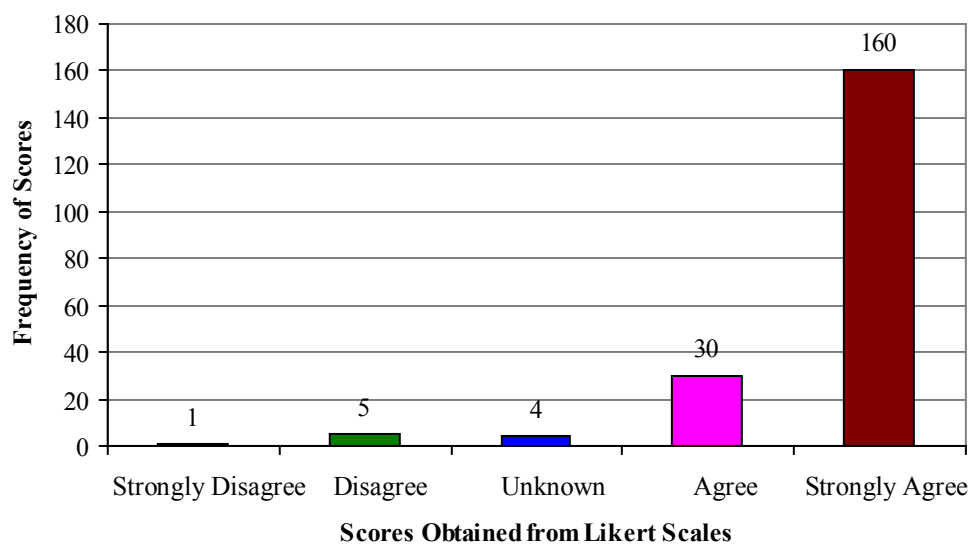
Item 18: You like to plant flowers and fruit trees in vacant places of house.



Environmental Management Graph, Fig. 18

This was a graph of positive item. 82.5% of women from both rural and urban areas strongly believed that they liked to plant flowers in vacant places of their houses. The result was highly satisfactory as it showed women's love for nature and natural greenery. Only 4% of the women moderately believed the fact. 1.5% of women did not give any opinion. Only 3.5% of women moderately believed that they were not interested in planting any kind of plants in vacant places of their houses.

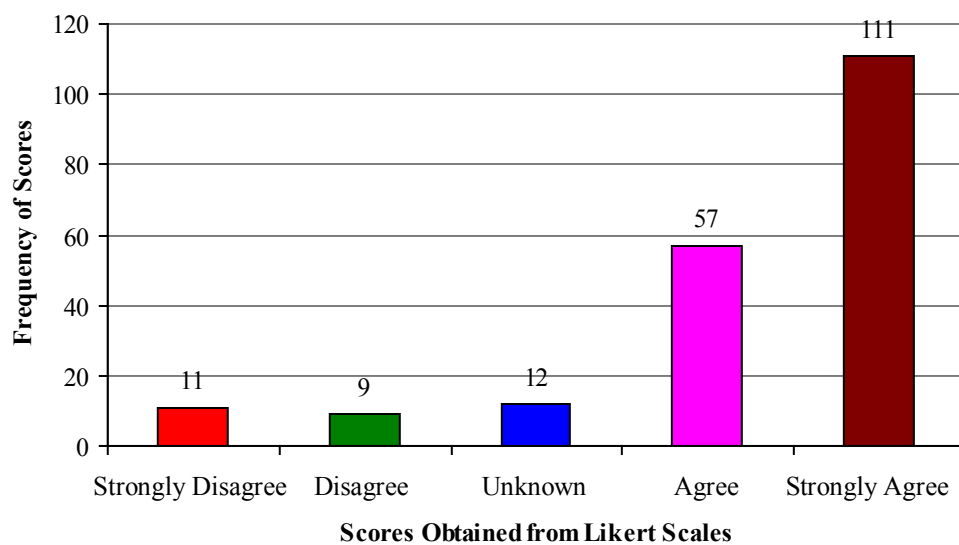
Item 19: You like to plant flowers and fruit trees in vacant places of your workplace.



Environmental Management Graph, Fig. 19

This was a graph of positive item. 80% of women from both rural and urban areas strongly believed that they liked to plant any fruit trees and vegetables in the vacant places of their houses. Only 15% of women moderately believed that they would like to plant plants. Only 2% of women did not express their likings. 2.5% of women moderately believed that they did not like to plant any plants. Only 0.5% of women strongly believed that they also disliked such plantation in their houses.

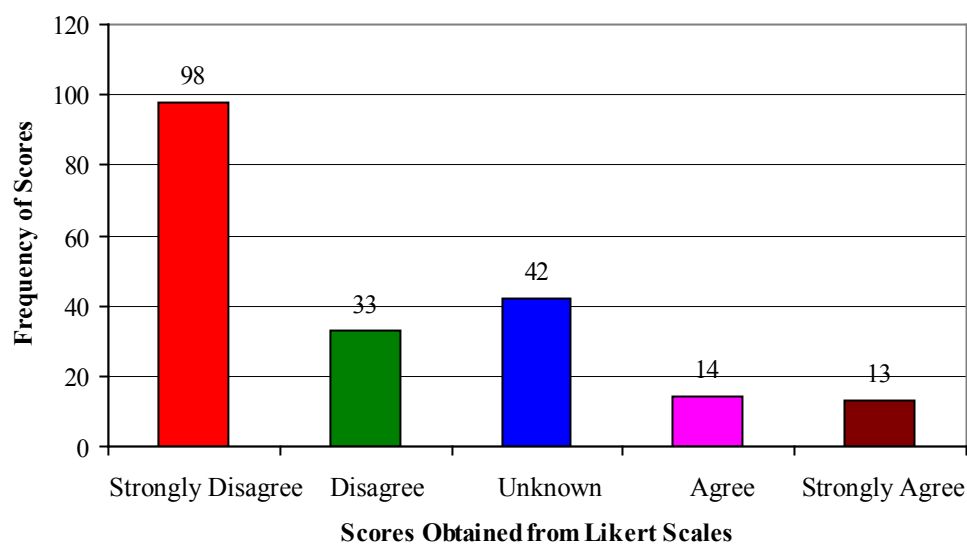
Item 20: Each member of our family takes care of your gardening of flowers as well as vegetables.



Environmental Management Graph, Fig. 20

This was a graph of positive item. 55.5% of women both from rural and urban areas strongly believed that each member of their family would take care of the garden of flowers as well as vegetables. 28.5% of women moderately believed the fact. Only 6% of women did not have any opinion. 4.5% of women moderately believed that their family was disinterested in gardening. 5.5% of women strongly disagreed the matter.

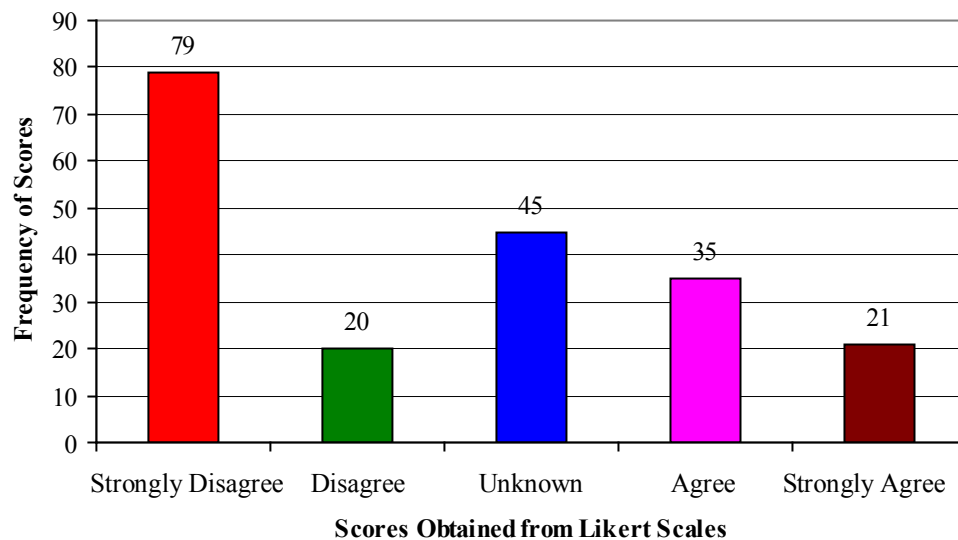
Item 21: Cooking is impossible without earthen pots.



Environmental Management Graph, Fig. 21

This was a graph of negative item. This graph had shown the concept of eco-friendliness of women. This was highly satisfactory that 49% of women both from rural and urban areas strongly believed that cooking in earthen pot was very hygienic. 16.5% of women moderately believed the notion. 21% of women did not give their opinion over the matter. That was alarming. Only 7% of women moderately disagreed the matter. 6.5% of women strongly opined that cooking was impossible without earthen pot.

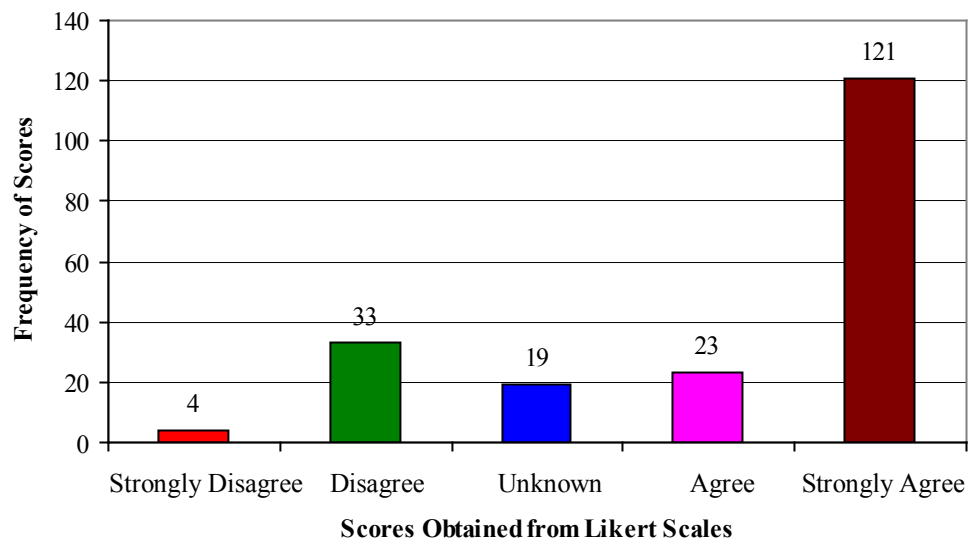
Item 22: The presentation papers should be disposed than to preserve.



Environmental Management Graph, Fig. 22

This was a graph of negative item. 39.5% of women both from rural and urban areas strongly believed that papers should not be wasted. Only 10% of women moderately believed the notion. 22.5% of women did not express their opinion over the matter. 17.5% of women moderately opposed the matter. 10.5% of women strongly believed that the presentation papers should be disposed than to preserve.

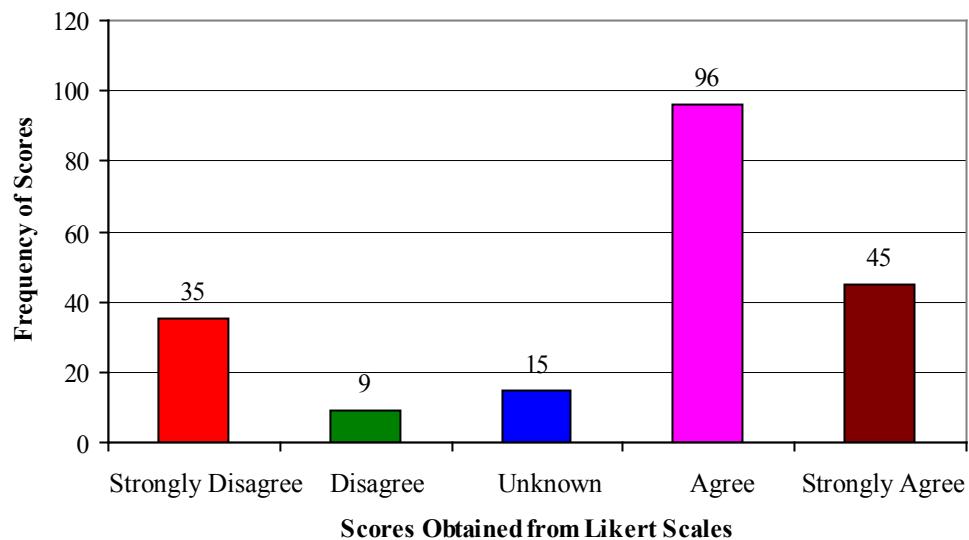
Item 23: Plastic bags should be banned.



Environmental Management Graph, Fig. 23

This was a graph of positive item. 60.5% of women both from rural and urban areas strongly believed that plastic bags should be banned. The result was satisfactory. 11.5% of women moderately believed the matter. 9.5% of women did not express their opinion over the matter. 16.5% of women moderately believed that the plastic bags should not be banned. 2% of women strongly believed that plastic bags were essential in life.

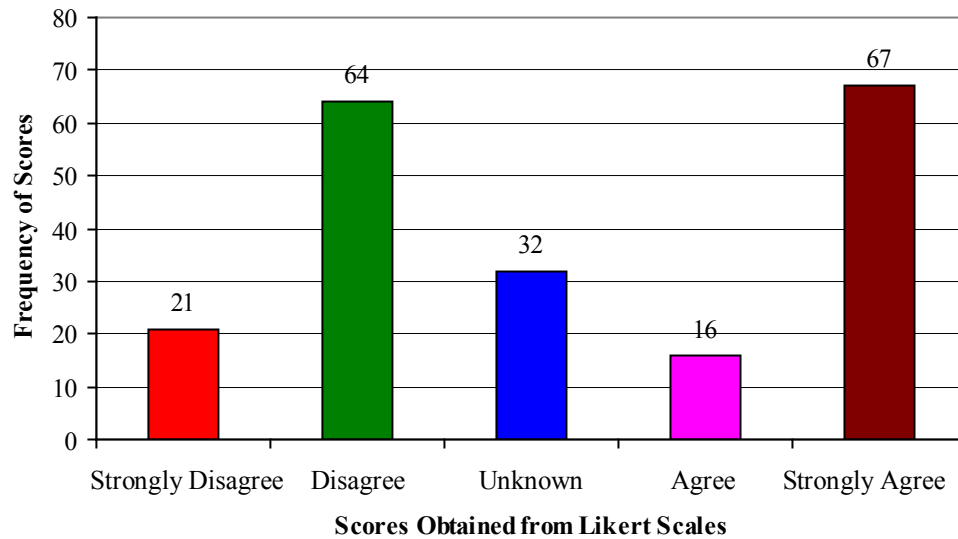
Item 24: We can dump garbage anywhere.



Environmental Management Graph, Fig. 24

This was a graph of negative item. 17.5% of women both from rural and urban areas strongly believed that they could never dump garbage anywhere. 4.6% of women moderately believed the same view. This was satisfactory. Only 7.5% of women remained silent over the matter. 48% of women moderately believed that they could easily dump garbage anywhere. 22.5% of women strongly agreed with the view that they could dump garbage at any place.

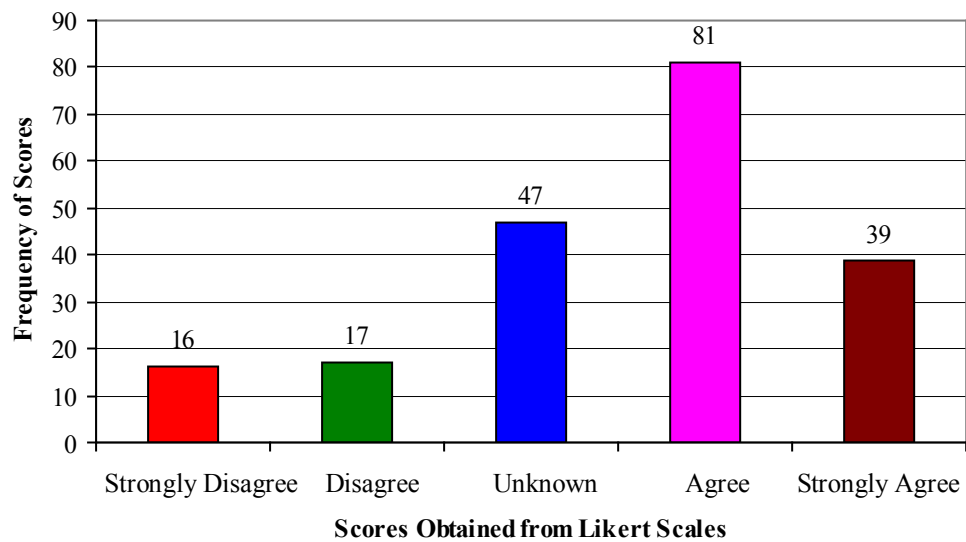
Item 25: You have domestic animals.



Environmental Management Graph, Fig. 25

This was a graph of positive item. 33.5% of women both from rural and urban areas strongly believed that they cared domestic animals in their houses. 4% of women moderately cared for domestic animals. 16% of women remained silent. 32% of women moderately disagreed to care tenderly the domestic animals. 10.5% of women strongly opposed to tend domestic animals.

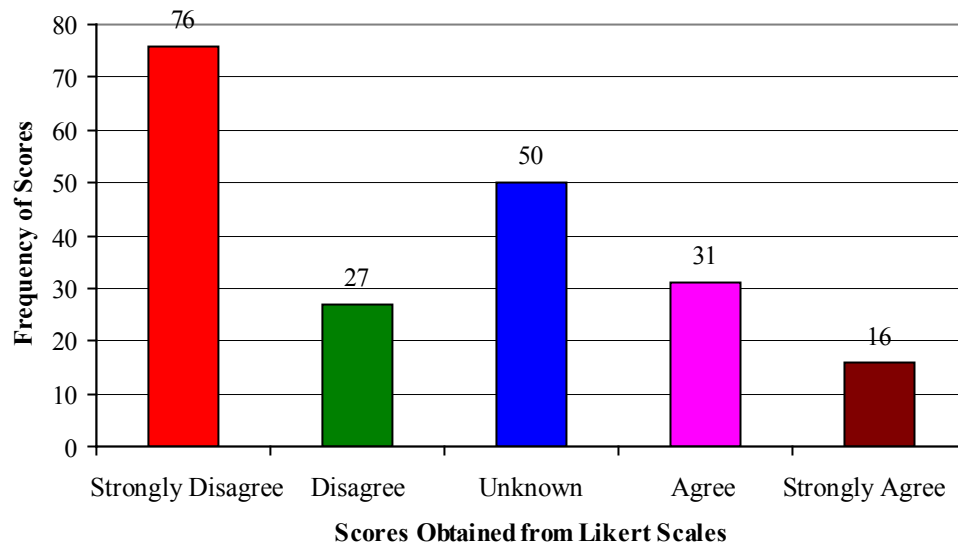
Item 26: If the domestic animals are affected by diseases, they should be sold.



Environmental Management Graph, Fig. 26

This was a graph of negative item. Only 8% of women both from rural and urban areas strongly opposed that diseased domestic animals might be sold. 8.5% of women moderately believed that view. 23.5% of women remained silent. 40.5% of women moderately believed with the view that disease-affected domestic animals should be sold. 19.5% of women strongly believed with the same view.

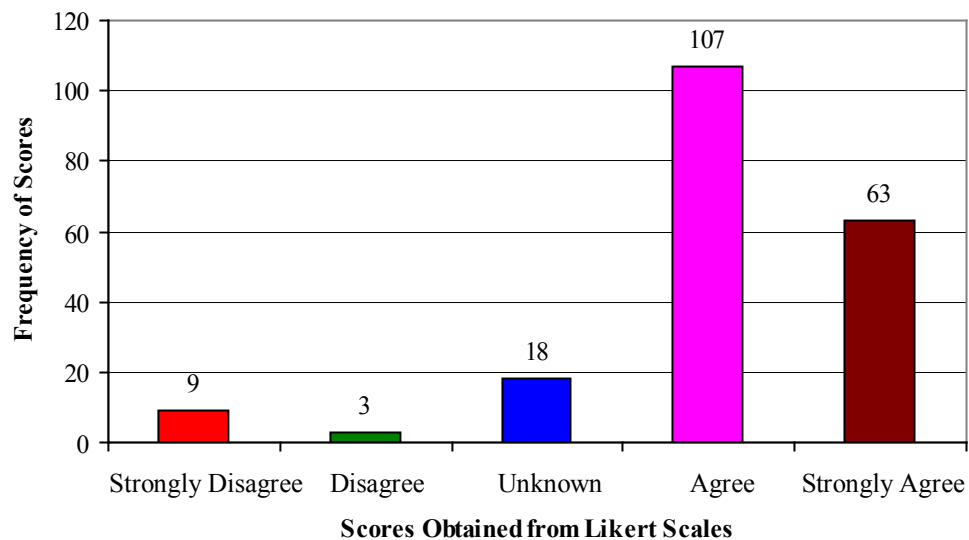
Item 27: Cooking fuels may be collected from trees from surroundings.



Environmental Management Graph, Fig. 27

This was a graph of negative item. 38.5% of women from both rural and urban areas strongly believed that cooking fuels might not be collected from surrounding trees. 13.5% of women moderately agreed with the view. 25% of women remained silent. 15.5% of women moderately believed that cooking fuels might be collected from surrounding trees. 8% of women strongly believed the same.

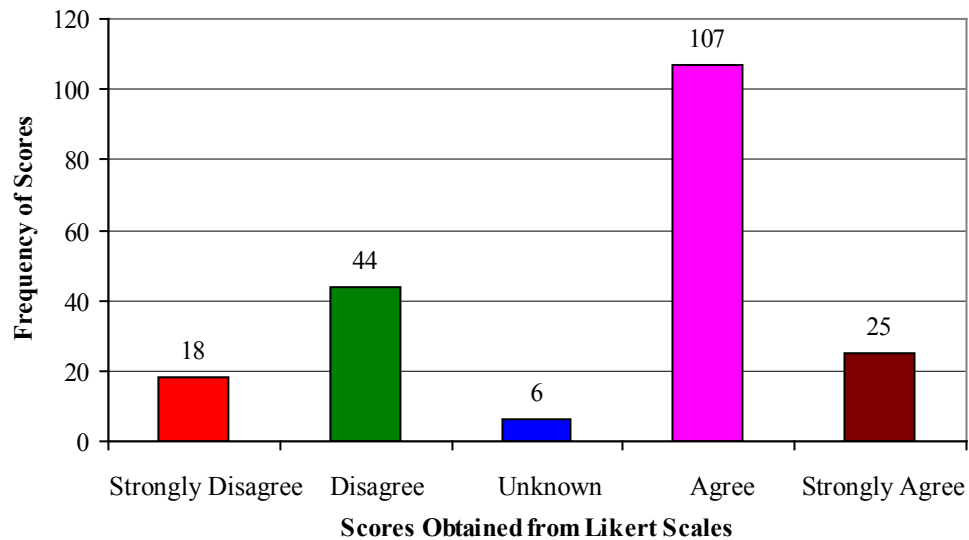
Item 28: There is no problem in spitting anywhere.



Environmental Management Graph, Fig. 28

This was a graph of negative item. 4.5% of women both from rural and urban areas strongly believed that there was severe problem in spitting anywhere. 1.5% of women moderately believed the same. 9% of women did not comment over the matter. 53.5% of women moderately believed that there was no problem in spitting anywhere. 31.5% of women strongly believed that spitting anywhere caused no problem. This was alarming.

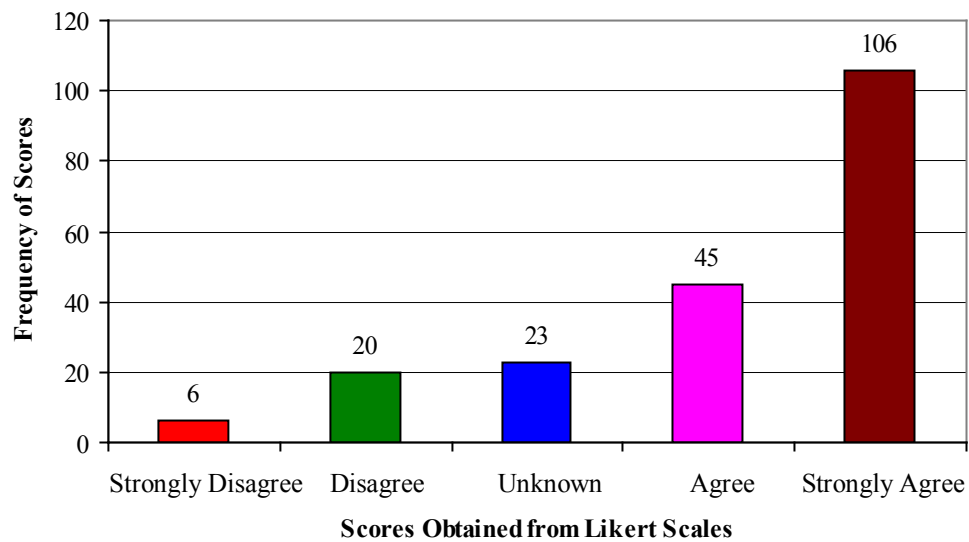
Item 29: Your opinion has no value regarding the purchase of household products like food, utensils, dresses etc.



Environmental Management Graph, Fig. 29

This was a graph of a negative item. 9% of women both from rural and urban areas strongly believed that their opinion had much value regarding the purchase of household products like food, utensils, dresses etc. 22% of women moderately agreed the view. 3% of women were silent over the matter. 53.5% of women moderately believed that their opinion had no value regarding the purchase of household products like food, utensils, dresses etc. 12.5% of women strongly opposed that their comments regarding household purchasing were meaningless. That was also alarming. The real position of women in society had been portrayed through this picture.

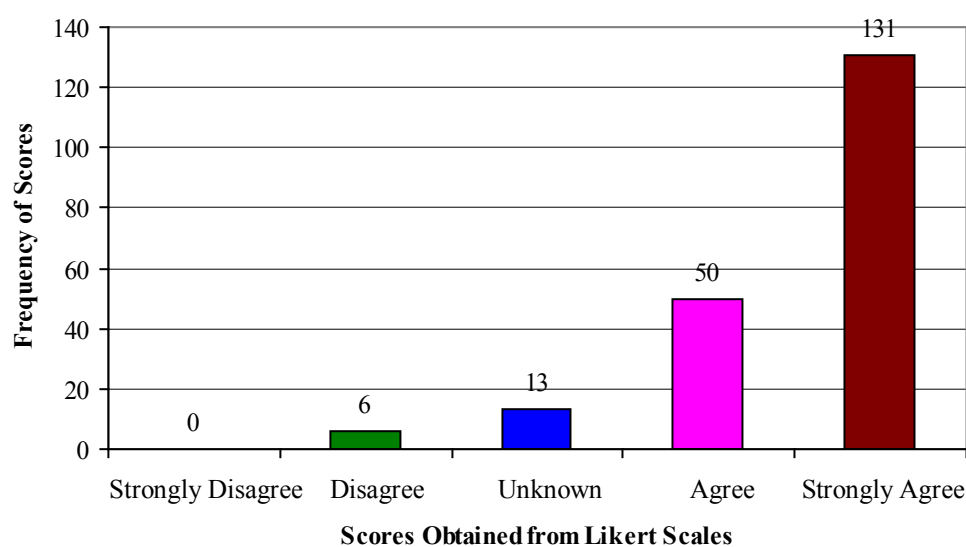
Item 30: A woman will decide herself the number of children.



Environmental Management Graph, Fig. 30

This was a graph of positive item. 53% of women both from rural and urban areas strongly believed that women would decide themselves the number of children. 22.5% of women moderately admitted the matter. 11.5% of women remained silent over the matter. 10% of women moderately believed that women would not decide themselves the number of children. 3% of women strongly believed that they would not decide the number of their own children themselves.

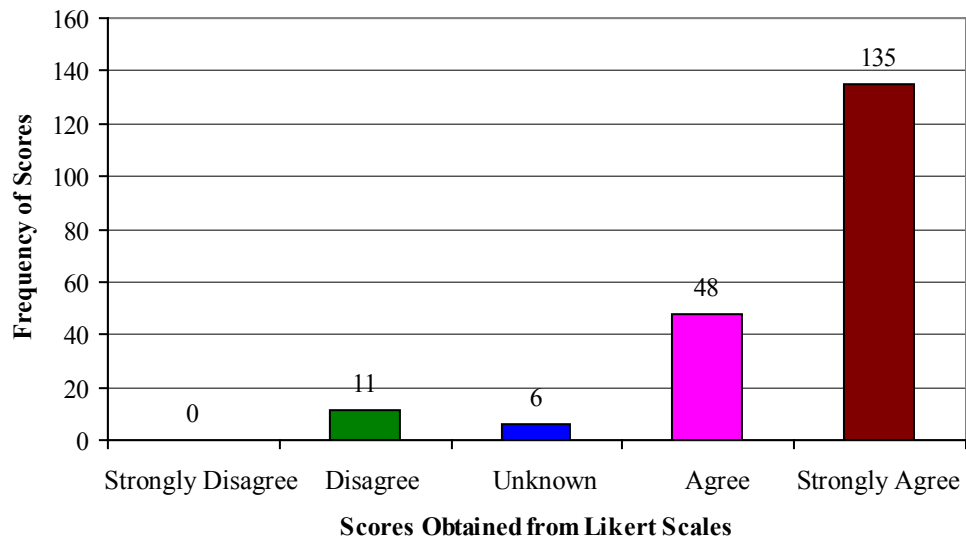
Item 31: Both the male and female member can manage the economic sector of the family.



Environmental Management Graph, Fig. 31

This was a graph of positive item. 65.5% of women both from rural and urban areas strongly believed that both the male and female members could manage the economic sector of the family. 25% of women moderately believed the notion. 6.5% of women remained silent over the matter. 3% of women moderately believed that both the male and female members could not manage the economic sector of the family.

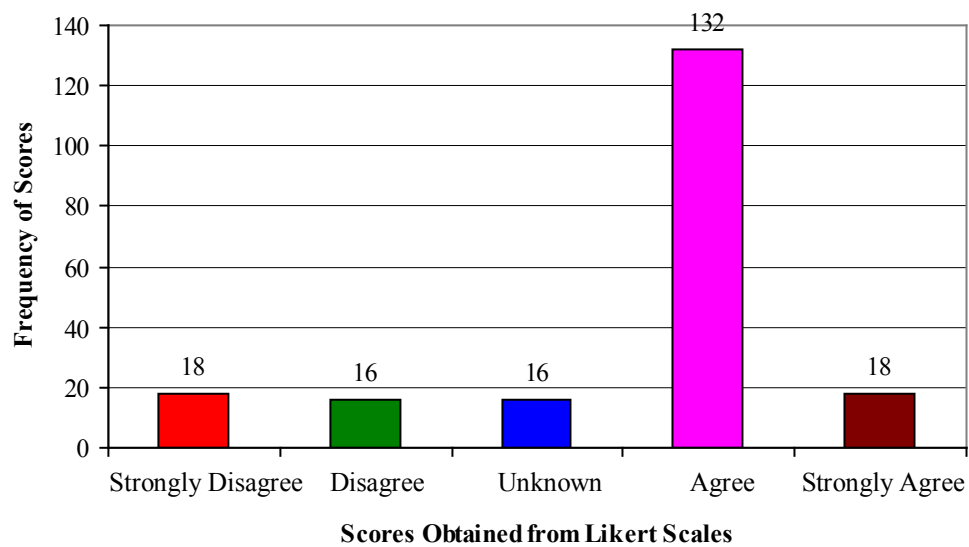
Item 32: You express your opinion freely regarding family matters.



Environmental Management Graph, Fig. 32

This was a graph of positive item. 67.5% of women both from rural and urban areas strongly believed that they could express their opinion freely regarding family matters. 24% of women moderately believed the same. 3% of women remained silent over the matter. 5.5% of women moderately believed that they could not express their opinion freely regarding family matters.

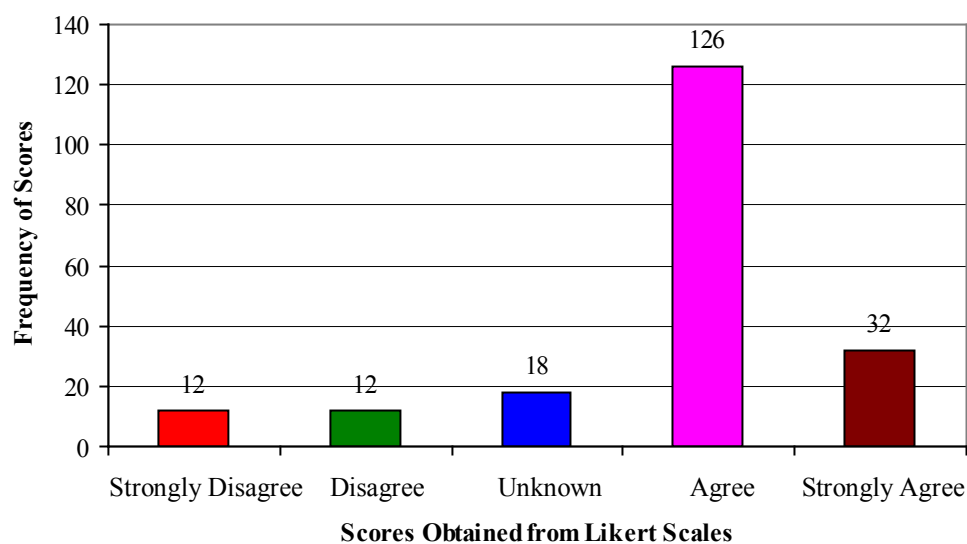
Item 33: When anyone in the family is ill, you bring medicine from shop without consulting doctors.



Environmental Management Graph, Fig. 33

This was a graph of negative item. Only 9% of women both from rural and urban areas strongly believed that they would not bring medicine from shop without consulting doctors when anyone in the family was ill. 8% of women moderately believed the fact. 8% of women did not give any opinion regarding the matter. 66% of women moderately believed the fact that they would bring medicine from shop without consulting doctors, when anyone in the family was ill, 9% of women strongly believed the same. That was very alarming.

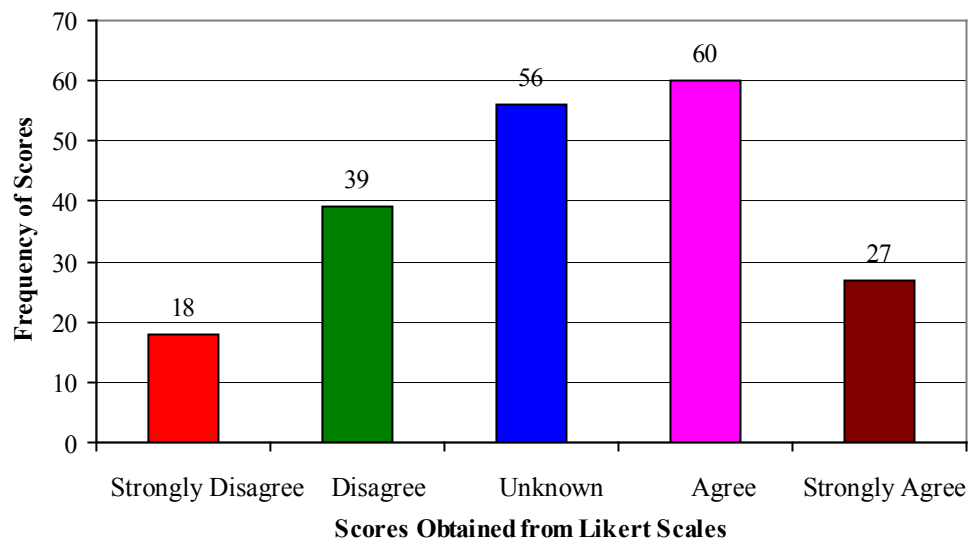
Item 34: Vaccination is of no value to protect child's health.



Environmental Management Graph, Fig. 34

This was a graph of negative item. Only 6% of women both from rural and urban areas strongly believed that vaccination had much value to protect child's health. 6% of women moderately believed the same. 9% of women did not express their opinion. 63% of women moderately believed that vaccination was of no value to protect child's health. 16% of women strongly believed the same notion. This was very alarming in respect to child's mortality.

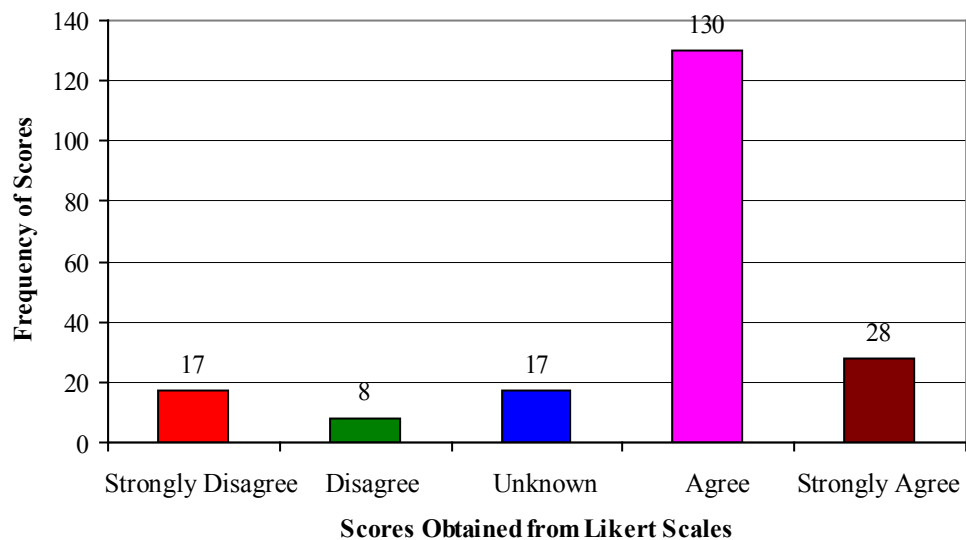
Item 35: Aids is transmitted by touch.



Environmental Management Graph, Fig. 35

This was a graph of negative item. 9% of women both from rural and urban areas strongly believed that aids had never been transmitted by touch. 19.5% of women moderately admitted the same. 28% of women did not give their opinion. 30% of women moderately believed that aids had been transmitted by touch. 13.5% of women strongly believed that aids would be infectious.

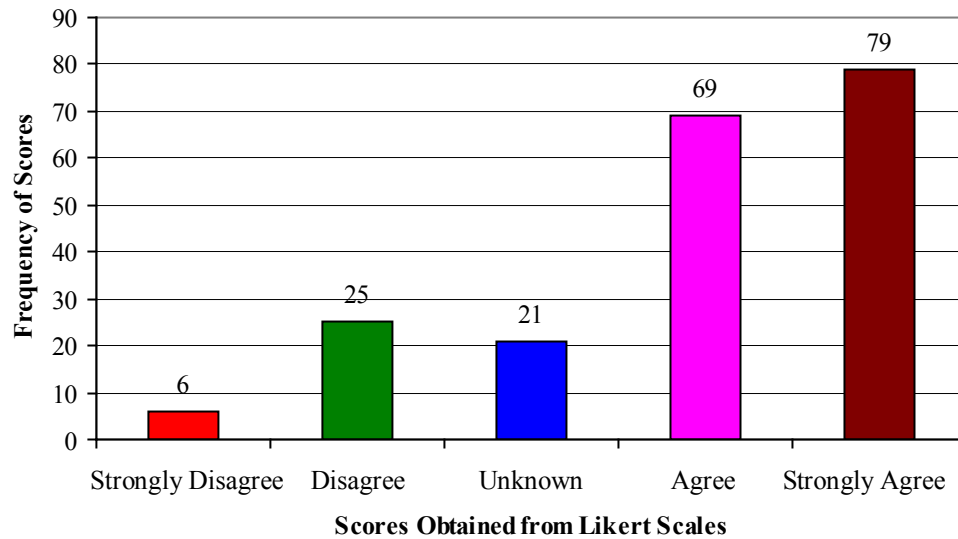
Item 36: We do not need any proper place for sanitation.



Environmental Management Graph, Fig. 36

This was a graph of negative item. 8.5% of women both from rural and urban areas strongly believed that they always needed a proper place for sanitation. 4% of women moderately agreed the matter. 8.5% of women did not comment anything. 65% of women moderately believed that they did not need any proper place for sanitation. 14% of women also strongly believed the view. That was very alarming.

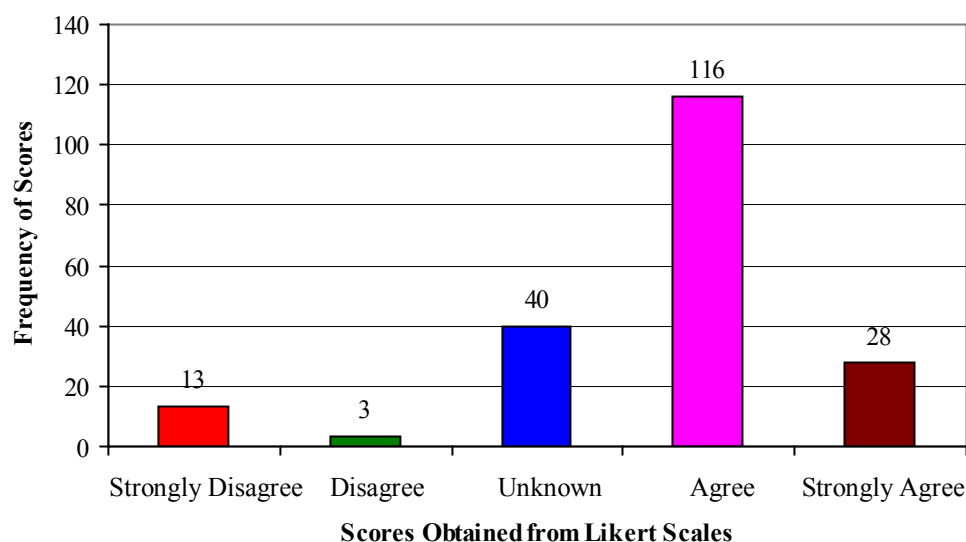
Item 37: You like a seasonal fruit daily in your diet.



Environmental Management Graph, Fig. 37

This was a graph of positive item. 39.5% of women strongly believed that they would like a seasonal fruit daily in their diet. 34.5% of women moderately believed the same. 10.5% of women did not pay any heed to the matter. 12.5% of women moderately believed that they did not like fruit in their diet. 3% of women strongly disliked to keep any seasonal fruit in their diet.

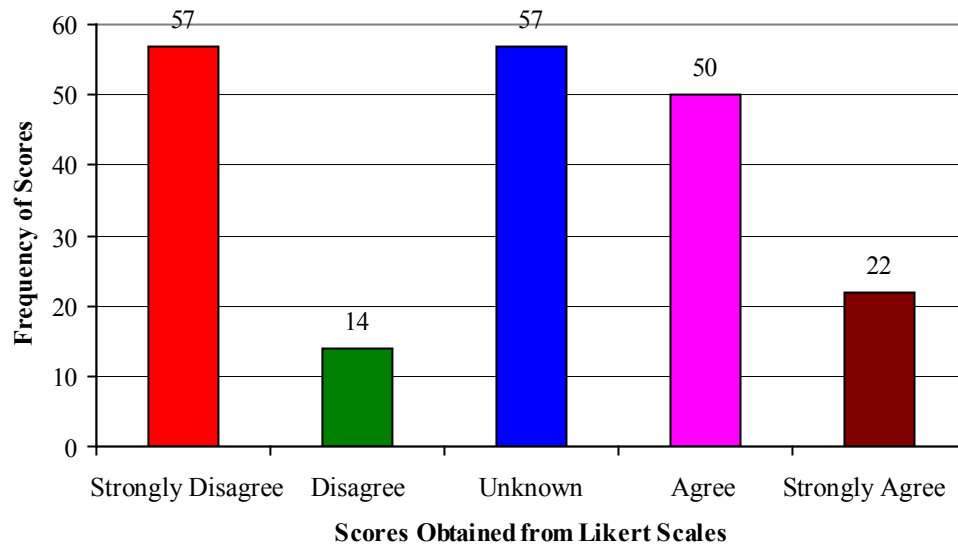
Item 38: We do not need to wash hands before eating.



Environmental Management Graph, Fig. 38

This was a graph of negative item. 6.5% of women both from rural and urban areas strongly believed that they always needed to wash hands before eating. 1.5% of women moderately agreed the matter. 20% of women remained silent over the matter. 57% of women moderately believed that they did not need to wash hands before eating. 14% of women strongly believed the same thing. This was alarming in respect to health and sanitation.

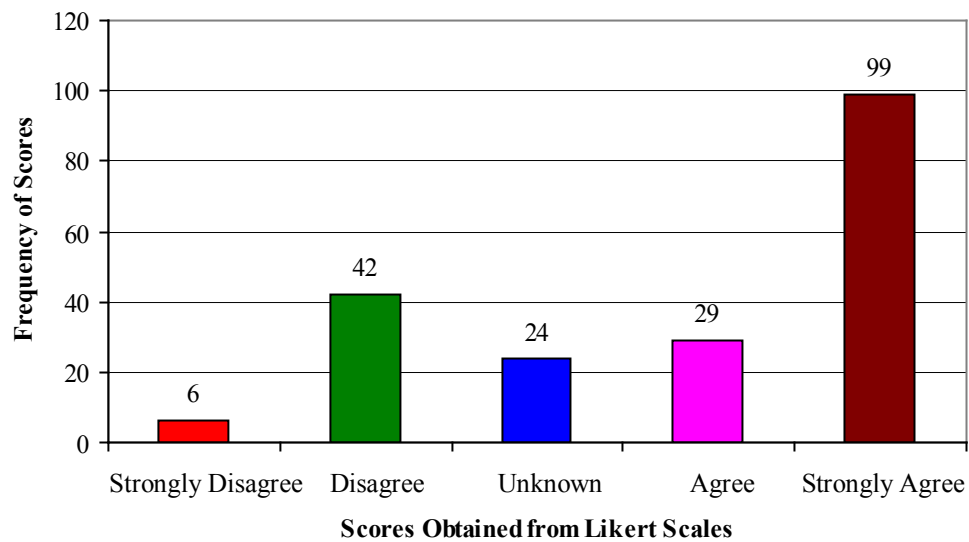
Item 39: To use the water of pond for cooking is good for health.



Environmental Management Graph, Fig. 39

This was a graph of negative item. 28.5% of women both from the rural and urban areas strongly believed that pond water should not be used in cooking. That was not good for health. 9% of women moderately believed the same. 28.5% of women paid no heed to the problem. 25% of women moderately believed that using pond water for cooking was good for health. 11% of women also strongly believed the same.

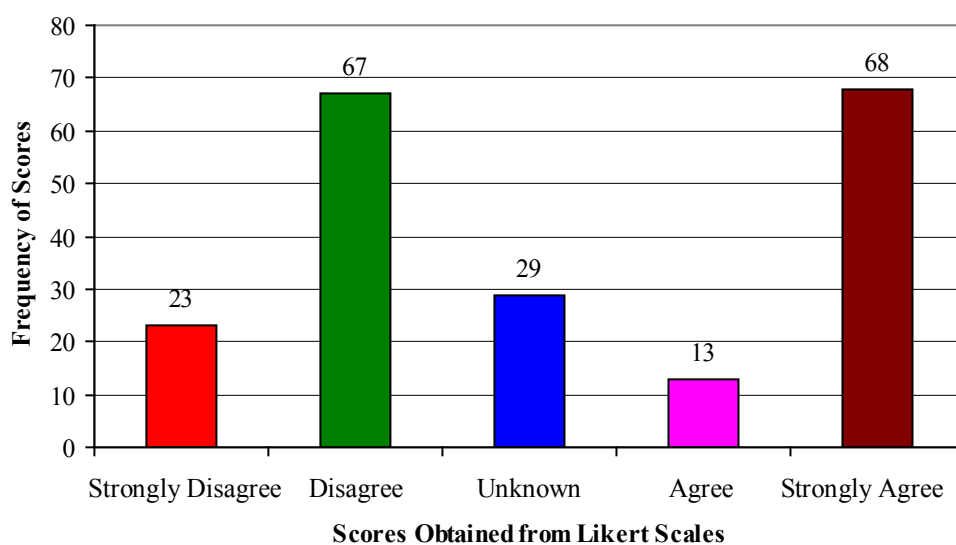
Item 40: It is essential to brush our teeth at night than morning.



Environmental Management Graph, Fig. 40

This was a graph of positive item. 49.5% of women strongly believed that brushing the teeth was essential at night than morning. 14.5% of women moderately believed that. 12% of women paid no attention to the problem. 21% of women moderately believed that brushing the teeth was not essential at night than morning. 3% of women also strongly admitted the same.

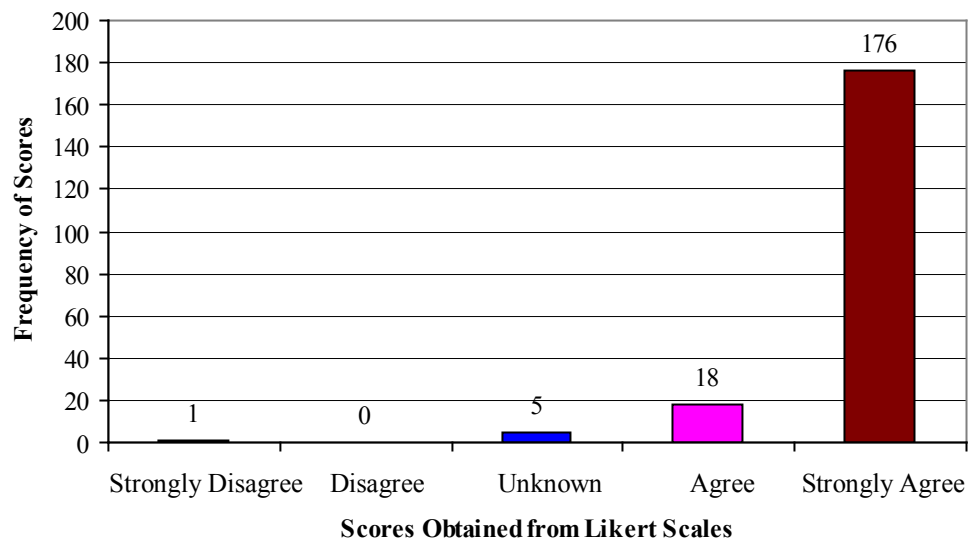
Item 41: Drinking water should be stored well in plastic bottles rather than earthen pots.



Environmental Management Graph, Fig. 41

This was a graph of negative item. 11.5% of women both from rural and urban areas strongly believed that drinking water should be stored well in earthen or sterilized utensils rather than plastic bottles. 33.5% of women moderately believed the fact. 14.5% of women remained silent over the matter. 6.5% of women moderately believed that drinking water should be stored well in plastic bottles. 34% of women strongly believed the same. This was alarming in respect to health and hygiene.

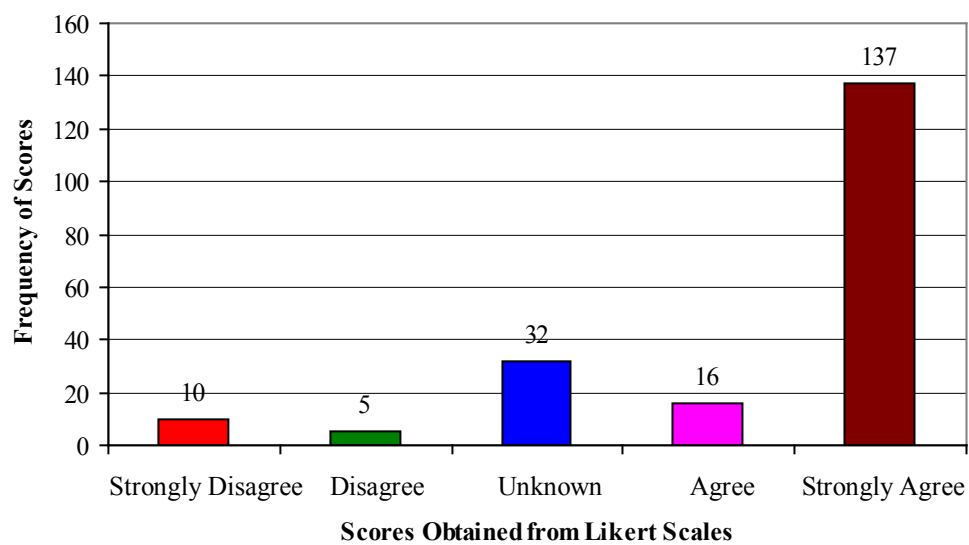
Item 42: Breast milk is primary food for building a child's health.



Environmental Management Graph, Fig. 42

This was a graph of positive item. 88% of women both from rural and urban areas strongly believed that breast milk should be the primary food for building a child's health. This was highly satisfactory. Only 9% of women also agreed moderately with this view. 2.5% of women remained silent. Only 0.5% of women disagreed the utility of mother's milk.

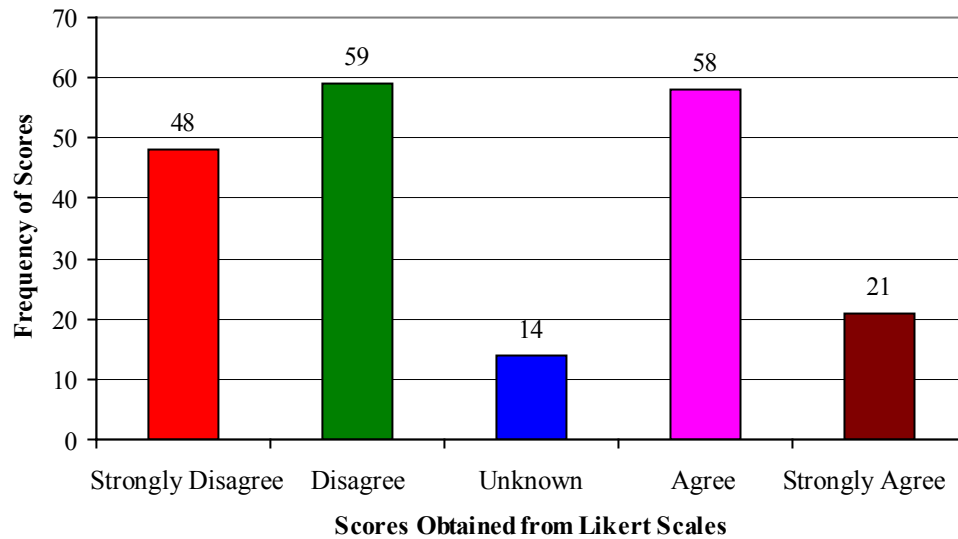
Item43: It is better to make the arrangement of delivering of a pregnant mother to hospital than houses.



Environmental Management Graph, Fig. 43

This was a graph of positive item. 68.5% of women both from rural and urban areas strongly believed that hospital would be more safe than home in case of a pregnant mother who was giving birth to a child. 6% of women moderately accepted the view. 16% of women moderately kept their belief on home rather than hospital for giving birth to a child. 5% of women strongly agreed for home.

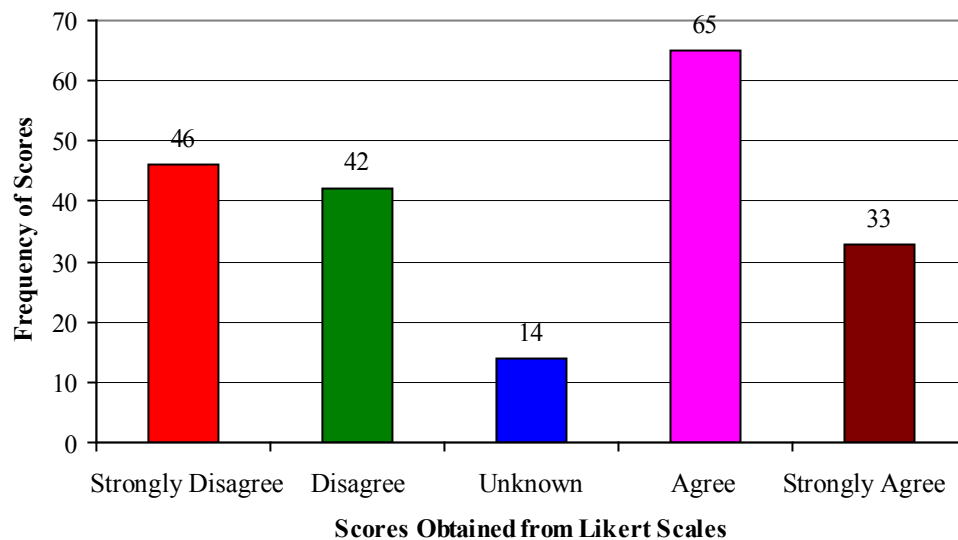
Item 44: Use excess of water during bathing or washing clothes is essential.



Environmental Management Graph, Fig. 44

This was a graph of negative item. 24% of women strongly believed that water should not be wasted during bathing or washing clothes. 29.5% of women moderately accepted the notion. 7% of women did not pay any heed. 29% of women moderately believed that there was no harm in using excessive water at the time of bathing or washing clothes. 10.5% of women strongly agreed with the excessive use of water.

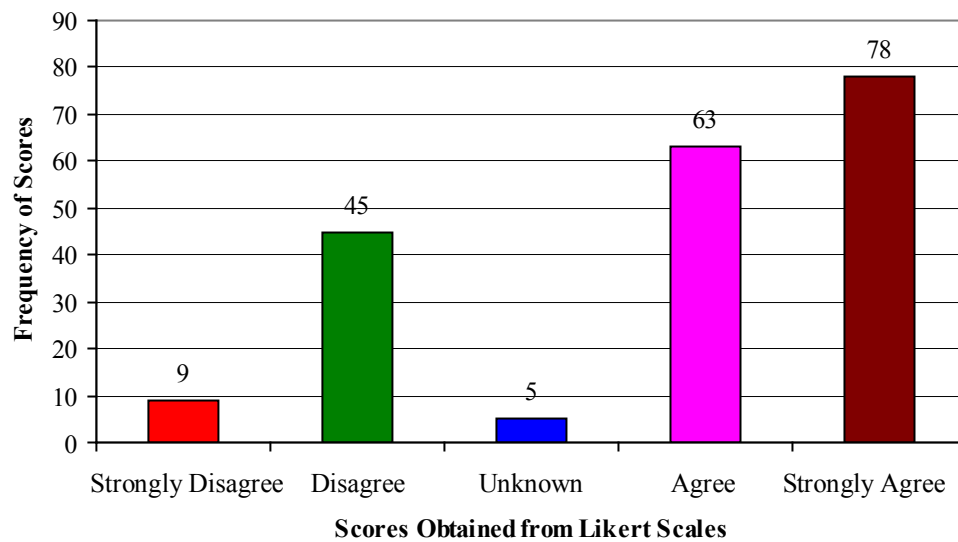
Item 45: We can do nothing wastage of water from tap.



Environmental Management Graph, Fig. 45

This was a graph of negative item. 23% of women strongly believed that wastage of water from tap should be totally stopped. 21% of women moderately believed the same notion. 7% of women paid no heed. 32.5% of women moderately believed that they could do nothing regarding wastage of water from top. 16.5% of women strongly believed the same.

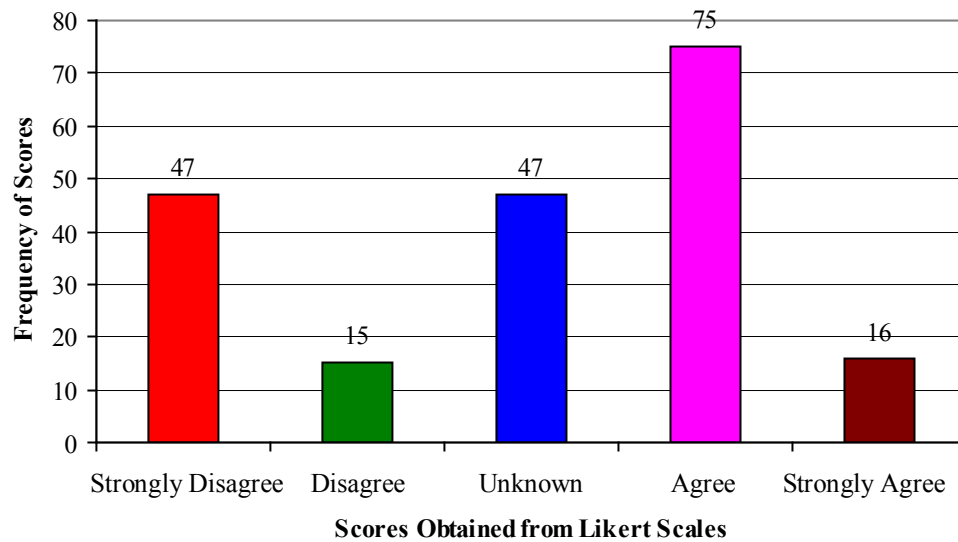
Item 46: The number of trees is reduced in last ten years.



Environmental Management Graph, Fig. 46

This was a graph of positive item. 39% of women strongly believed that the number of trees had been reduced in last ten years. 31.5% of women moderately accepted the view. 2.5% of women remained silent. 22.5% of women moderately believed that the number of trees had not been reduced in last ten years. 4.5% of women strongly believed the same notion.

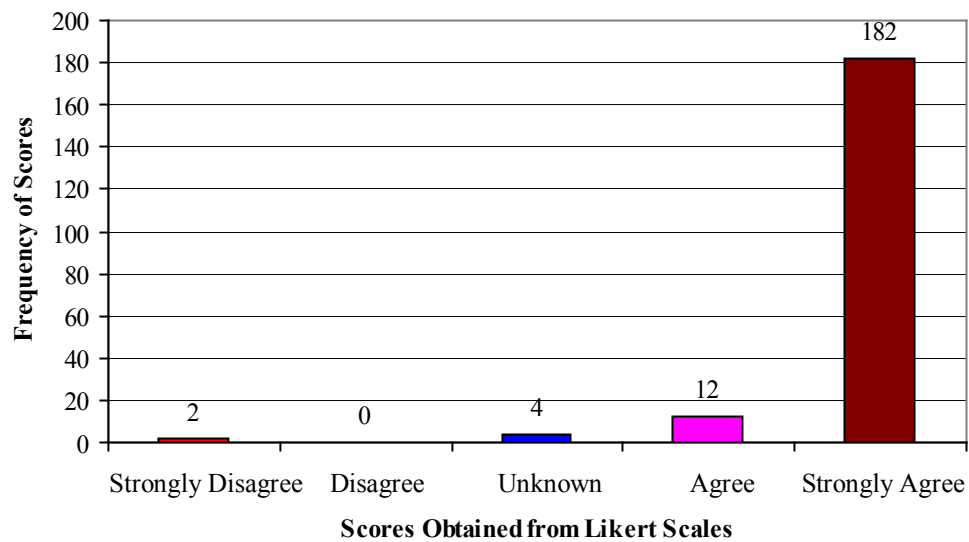
Item 47: There is no substitute for plastic bags.



Environmental Management Graph, Fig. 47

This was a graph of negative item. 23.5% of women strongly believed that plastic bags should be rejected. 7.5% of women moderately accepted the view. 23.5% of women were of no opinion. 37.5% of women moderately believed that there was no substitute for plastic bags. 8% of women strongly were in favour of plastic bags.

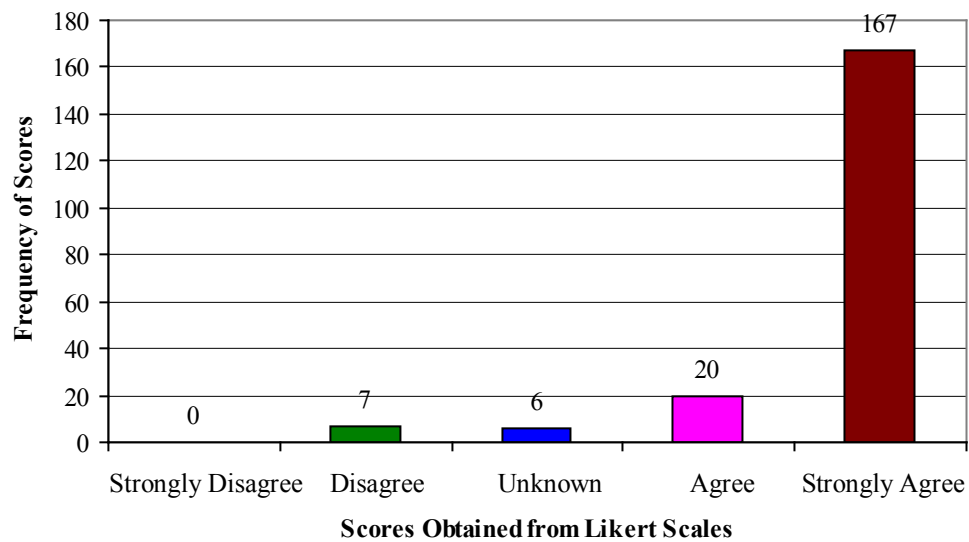
Item 48: Green vegetables contain more vitamins.



Environmental Management Graph, Fig. 48

This was a graph of positive item. 91.% of women both from rural and urban areas strongly believed that green vegetables would contain more vitamins. 6% of women moderately believed the same notion. 2% of women paid no heed and 01% of women strongly believed that green vegetables did not contain more vitamins.

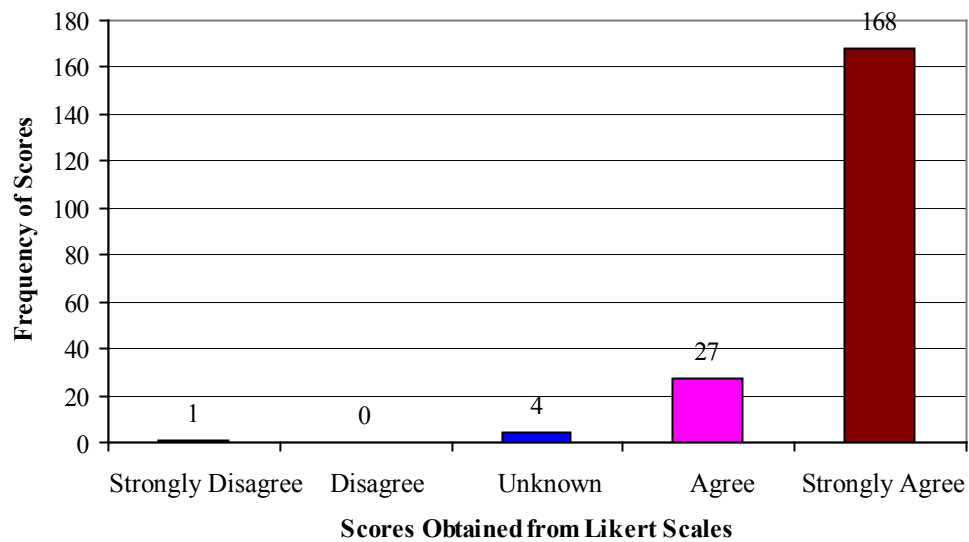
Item 49: Education not only creates scope for employment but also teaches how to keep environment clean.



Environmental Management Graph, Fig. 49

This was a graph of positive item. 83.5% of women both from rural and urban areas strongly believed that education would not only create scope for employment but would also teach how to keep environment clean. 10% of women moderately admitted the fact. 3% of women remained silent. 3.5% of women the relationship between education and employment.

Item 50: The first step to be independent is to respect oneself.



Environmental Management Graph, Fig. 50

This was a graph of positive item. 84% of women both from rural and urban areas strongly believed that the first step to be independent was to respect oneself. 13.5% of women strongly believed the notion. 2% of women paid no heed. Only 0.5% of women strongly disagreed the relation between independence and respect.

Chapter- VI

FINDINGS AND CONCLUSION

6.1 Summary of Findings and Concluding Observation

In a rapidly changing global scenario, the importance of women participation is second to none. Women, who make up half of the world's population, have benefited more than men from the progress in economic and social development in the last three decades. Nevertheless, they continue to be over represented among the world's most vulnerable groups. Gender is a goal in its own right but also a key factor for sustainable economic growth, social development and environmental sustainability. By providing the same opportunities to women and, including in decision making in all kinds of activities, a sustainable path of development can be achieved to ensure that women's and men's interests are both taken into account in the allocation of resources.

This study covers a wide spectrum of female population in the district of Nadia. Transcending man-made, societal and traditional borders of division it proves deep into the lives of the subjects. Evaluation and concept formation of their attitudes, background and responses have been a varied and fruitful experience, though painstaking at times.

This study was conducted to get the answers of a set of objectives in relation to women and their participating in environmental management in the district of Nadia. In this connection four Gram panchayets namely Nokari (Ranaghat block-2); Rowtari (Chakdaha block); Fatepur (Haringhata block); Chapra

(Krishnagar block) and the four Municipalities namely Ranaghat, Chakdaha, Kalyani, Nabadwip in the district of Nadia have been surveyed.

Collected data were analysed logically and statistically keeping the objective in mind. The educational reports of district Nadia highlight that the women in Nadia division have not given adequate stress in comparison with the education of men. Therefore the study was conducted to estimate the literacy rate of the women with reference to the different categories of people. The general assumption is that education increases awareness among the people. Accordingly higher educated women are more expected to aware about their environment. Therefore it is a clear indication about the lack of awareness and participation among SC and ST in the various Gram Panchayets and municipalities in the district of Nadia are due to illiteracy and poverty.

To obtain the clear-cut findings on the issue of educational status, occupational background, age structure, family income, marital status and nature of family sample survey, conducted in the various Gram Panchayets and Municipalities in the district of Nadia. In this connection about 300 village women were selected. A comparative analysis has been made to estimate the relation and nature of trend in those areas.

6.2 Findings

6.2.1 Findings from Hypotheses Testing

After successful completion of the statistical analysis of the collected data, the researcher obtained the following major findings of her study :

Findings 1: The researcher has discerned no significant difference of mean in Rural Students between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 2: The researcher has discerned significant difference of mean in Rural Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 3: It has been found that there is no significant difference of mean in Rural Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 4: It has been observed from the study that there is no significant difference of mean in Urban Students between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 5: The researcher has discerned no significant difference of mean in Urban Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 6: The researcher has found that there is no significant difference of mean in Urban Policy Makers and Service Holders between age

group upto 25 and above 25 with respect to participation in environmental management.

Findings 7: The researcher has discerned no significant difference of mean in age upto 25 between Rural and Urban Students with respect to participation in environmental management.

Findings 8: It has been found from the study that there is significant difference of mean in age upto 25 between Rural and Urban Housewives with respect to participation in environmental management.

Findings 9: It has been observed from the study that there is significant difference of mean in age upto 25 between Rural Policy Makers and Service Holders and Urban Policy Maker and Service Holder with respect to participation in environmental management.

Findings 10: The researcher has observed that there is no significant difference of mean in age above 25 between Rural Students and Urban Students with respect to participation in environmental management.

Findings 11: The researcher has discerned no significant difference of mean in age above 25 between Rural Housewives and Urban Housewives with respect to participation in environmental management.

Findings 12: It has been observed from the study that there is no significant difference of mean in age above 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service Holders with respect to participation in environmental management.

6.2.2 General Findings

- Findings 1:** Promotion of environmental participation through awareness and education is a social need.
- Findings 2:** Indian women should take a great role in conservation of environment, as there is always irregular and unplanned development in rural and urban areas.
- Findings 3:** Sympathetic attitudes towards environment should be development among general people by the women.
- Findings 4:** Women can ensure that it is our responsibility to participate in different programme of environmental awareness.
- Findings 5:** Achievement and awareness are keenly related on the basis of environmental values which must first come from mother who is also a woman.
- Findings 6:** They are women who can create necessary arrangements to protect environment and its necessary diversities.
- Findings 7:** Women have greater awareness regarding environment, as their life-patterns are very much linked and dependent on environment.
- Findings 8:** Lack of awareness about conservation can cause extinction of many rear species from the environment; it is women who being a mother can teach her child or children to protect them.

- Findings 9:** Cutting few trees if required is not harmful statistically accepted but may cause a great disaster in future generations. A woman can interpret it better to the next generation.
- Findings 10:** Wildlife conservation, creation of National Park and other preservative measure are not necessary for maintaining environment awareness, accepted in calculation.
- Findings 11:** It is inferred from the statistics that human values especially woman value, can protect environment.
- Findings 12:** Rural women are more environment-friendly.
- Findings 13:** Natural influence and contribution of Environment Education are influencing for generating environmental awareness.
- Findings 14:** Plantation is an urgent need in awareness-generating programme.
- Findings 15:** Environmental awareness is not directly or indirectly balancing the ecosystem but it is environmental participation, which can do it properly.

6.2.3 Findings from Graphical Analysis

- Findings 1:** About 87% people (women from both rural and Urban) believed positively that the nature elements like tree, water, soil, air etc. would be very important for an living directly or indirectly where 11.5% believed it normally and to 1.5% it did matter nothing.

- Findings 2:** 70.5% women believed positively that the amount of rainfall would lessen if the numbers of trees would be reduced.
- Findings 3:** 74% women in both rural and urban areas positively believed that if one would be compelled to cut old trees, then the individual should plant new trees.
- Findings 4:** 17.5% women believed positively that there would be no harm in washing clothes in ponds. 82.5% women in urban areas believed that water bodies ought to be protected. What would be amazing should be that in rural areas, especially in most of the Gram Panchayat areas 42% rural and illiterate women believed that there would be no harm in washing clothes in ponds. Hence, the environment education should come in.
- Findings 5:** 66.5% women positively believed that the use of bio fertilizer in cultivation would never pollute but would enhance fertility.
- Findings 6:** 71% women agreed with the view that forest animals should be conserved and protected.
- Findings 7:** 47.5% women in both rural and urban areas agreed that the disposal of garbage in the house should be done in adjacent road or pond.
- Findings 8:** 60% was of the strong opinion that we should drink purified water; 22.5% would drink normally, 8% knew nothing; to 9.5% it did not any matter whether water should be purified or not.

- Findings 9:** 61% women in both rural and urban areas used cane bamboo basket to keep fruits, but in urban areas 38% women used fashionable thermocol dishes in household occasions. 43% women in both rural and urban areas liked to use plastic bags for shopping.
- Findings 10:** 82.5% women in both rural and urban areas agreed that they would like to plant flowers and fruit trees in vacant places of houses. Hence they took the support of their families. Hence the percentage was of 55.5%.
- Findings 11:** In rural areas, now a days too 49% women cooked in earthen pots.
- Findings 12:** Only 10.5% women believed that waste papers also would pollute our environment.
- Findings 13:** 60.5% women in both rural and urban areas believed that plastic bags should be banned.
- Findings 14:** 33.5% women in rural areas lived with animal husbandry. But they were almost ignorant about their nurturing. Only 08% believed that in case of illness they should be treated. But 40.5 % believed that they should be sold if diseases would have affected the domestic animals.
- Findings 15:** 53.5% women in both rural and urban areas believed that their opinion had no values regarding the purchase of household products like food, utensils, dresses etc.

- Findings 16:** 53% women believed that a woman would decide herself the number of children. But in reality, it would not. So, women participation should be increased to manage the environment well.
- Findings 17:** Regarding health consciousness, women would also lagging behind. In both rural and urban areas above 60% women believed that when any of their family members would fall ill, they would bring medicine from shop without consulting doctors and vaccination would have no value to protect child's health. 65% women did not know the meaning of 'sanitation'. The same population believed that Aids might be transmitted by touch. Only 11% women believed that it should be essential to brush our teeth at night than morning. 88% mother was of the opinion that breast milk should be the primary food for building a child's health. But the service holder mothers could not do the practice well. So, women would have an important place in decision making.
- Findings 18:** 16.5% women believed that they could do nothing regarding wastage of water from tap. 46% women in both rural and urban areas would waste water unnecessarily. It might be alarming.
- Findings 19:** 83.5% women from both rural and urban areas believed that education not only would create scope for employment but also would teach how to keep environment clean.
- Findings 20:** 84% women from both rural and urban areas had firm belief that the first step to be independent should be to respect oneself.

6.3 Conclusion

The findings showed participation and awareness in recycling and green spaces including factors such as creating, protecting and preserving green spaces, garbage segregation, collaboration and following up on neighbourhood's environmental issues. Women should take a great step towards preserving the environment and can increase their participation level. Women's participation in these matters, in neighbourhood's level, can protect the environment from destruction, Planting trees is one of utmost effective and economical ways to soften the urban environment. Planting on rooftops, front yards and neighbourhood's parks not only clean the air but also enhance the city's look. Since women represent the most influential social group on the environment, as the household's managers they can play the most important and crucial role by collaborating and taking part in garbage segregation from where it starts. Household waste segregation is the most important step in reducing environmental risk. Separating wet waste such as fruit peel, used tea, greens and food leftovers can increase the production of compost fertilizers, which are made from recycling wet waste. Separated dry waste which includes all kinds of garbage such as glass, paper, cardboards, plastic, metals, iron, aluminium and bread will not only be reused but will also prevent the loss of national assets. In addition, women can reduce the toxin waste level by separating hazardous household garbage such as insecticides, fluorescent lamps, shaving razors, paper napkins and batteries. Garbage segregation from its origin in executing the recycling project is a continuous attempt, which can make long-term goals of recycling waste possible, and women play a key role in this matter.

In this current century many women have come outside the home and have made an identity of their own but still there is far way to go. If women would not get their due respects in their own home, the achievement outside the world would not satisfy them. The opposite of patriarchy should not ever be matriarchy but it should be equality. So women should not be overpowered they should be equally powered so that the gender liberalisation comes to an end. It is a work for man, and it is a work for woman – this kind of thinking should be given a new thought. Both the home and the world are equally important for men and women so they should help each other in both the spheres to make this society a better one. Lastly women are being addressed as homemakers but if they are maltreated in their homes the home they would make will only be made by concrete elements not by affections. Home and Society should not be a place of domination for women rather it should be a place of free expressions for them. Then and only then, we can get a cleaner, greener and better-balanced society for ourselves and for our next generations.

The focus of this study was also to conduct the study of

- a) Women literacy rate
- b) Scope of women education
- c) Environmental awareness of women
- d) Women's participation in Environmental activities
- e) Women's awareness to reduce pollution in natural resources (water, air, energy etc.)
- f) Women's consciousness regarding health, nutrition and child care

- g) Women's consciousness regarding self-employment
- h) Other activities towards upliftment of the status of rural women in the society as well as the urban one.

Globalisation and the policies of economic liberalisation have come to dominate the national and international debate both at the educational and economic level. With the advent of globalisation and the course of new-liberal adjustment, women's movements world wide for education are taking on new arenas, new goals and strategies, and in some cases a whole new vocabulary. To mainstream women's concern and perspectives at all levels and to reach the dual objective of sustainable poverty reduction and preservation and enhancement of indigenous livelihood, the 21st century has seen that it is necessary to go beyond the conventional project method. A lot of studies on women and environment have shown that women are significant actors in natural resource management and they are major contributors to environment rehabilitation and conservation. In addressing some key environmental problems, women play a dominant role.

Human interaction with the environment started from the moment the life appeared on earth. The early man being afraid of lightning, thunder, dense forests and darkness started worshipping different aspects of nature. Human activities or interaction with the environment then had very little impact on it. Gradually, the human beings started making radical changes in the environment to satisfy his needs. These phenomena had reached their summit to say on a work scale in the modern century.

The failure to understand the place and role of man in the environment, the absence of elementary knowledge of the biosphere among people in most countries of the world and the booming scientific revolution have created serious imbalance. The modern development of science and technology has led too often to a wasteful intensification of the exploitation of natural resources.

Besides, there are waves of globalisation. The first wave of globalisation has started fifty years prior to the World War I, while the second and the third waves have taken place in 1950s to 1960s and 1980s to 1990s respectively. However, until recently, globalisation focuses mostly on issues such as new modes of Capitalist growth, expansion of market economy, expansion of new information and communication technologies and new liberal policies. According to new-liberals, globalisation and liberalisation are depicted as a fast express train to higher levels of development (Cheru, 2000). This fast express train has choked the tongue of environment and its soothing green.

Now it is high time to come forward to save and restore our environment. It is found that women have been responsible for subsistence and survival for water, food, fuel, fodder and habitat, though they rarely get the credit for nurturing these life support systems. Added to these environmental destruction, exacerbates women's problems in a way very difficult from that of men. There is the re-establishment and the symbiosis between communities, women and natural resources. This trend has a positive impact on existing development paradigms.

It is found that women have always been the principle conserver of biodiversity. Even today they perform duties such as seed selection, multiplication and conservation. The on-farm conservation traditions of rural and tribal women, with

reference to agro-biodiversity are well known. Unfortunately current food security systems depend on too few crops. It is important to expand the basis of food security by including large numbers of species and varieties of food plants still maintained by tribal and rural families.

Now, the fundamental and most important task is to educate and empower women. In view of low literacy rate of women and the gigantic task of educating the women a suitable strategy must have to be planned. The success of any strategy of women involvement, development and empowerment depends upon the following factors :

1. Level of education.
2. Concept of environmental education.
3. Social custom.
4. Family planning.
5. Health, medical services, cleanliness.
6. Environment, tree-growing, kitchen gardening.

The platform for 'Action and the giving declaration' states that equitable social development that recognises empowering the poor, particularly women living in poverty, to utilise environmental resources, sustainability is a necessary phenomenon. It is quite clear that without addressing the livelihood, it needs half of the humanity, it is not possible to achieve the human centred development that is needed to sustain us through the next century.

At the core of women's development agenda for the 21st century is women's vision of genders equity as the central principle of a new developmental process that would benefit women and men equally. This agenda aims to empower

women to re-orient, and re-shape policies and decisions through their active and full participation in the entire developmental process, seeking to empower women in claiming their basic right to education for sustainable livelihoods and secure lives.

Experience worldwide indicates women can ensure sustainable development and bio-diversity. By addressing the structural obstacles to the advancement of women, education has sought to facilitate the redefinition of gender roles and relations in the family and society. Efforts to enhance women's capabilities to promote social transformation, rural and economic development and the peace agenda have begun bearing fruit. Such efforts must encompass not only women's social needs and economic advancement, but also their increased participation in community organisation and in the political process, thereby building capacity and self-esteem. So what participation of women in environmental management does are the following :

6.3.1 The Strength of Women must be Built

Women have long been custodians of valuable indigenous knowledge related to the management of natural resources. Education has realised the importance of revitalising indigenous knowledge and blending it, where appropriate, with modern technology to achieve a grater and more sustained impact. Nevertheless, research support is often required to increase productivity and improve new products reduced costs.

6.3.2 The Recourses and Benefits must be Distributed Equally among Women

The design and implementation of policy and legislation (tenure, benefit-sharing, free prior and informed consent, intellectual property rights etc.) need to acknowledge that women folks are not passive and that mechanisms need to be

established to provide equitable representation of women and allow for transparency, accountability and conflict resolution. Often mechanisms need to be developed to ensure that the rights and interests of women are protected, without sacrificing the potential gains of others.

6.3.3 Holistic Approach should be Adopted

In approaching women, there is a need for a holistic perspective that embraces the totality of the social organisation, and economic and political life in which the household is embedded. This approach is also required in view of the plurality and diversity that characterise women. Moreover, sensitivity to cultural issues and language is an essential ingredient. The promotion of indigenous culture and languages through education has proved a key element in the strengthening of women's identity.

6.3.4 Equipping Women with Adequate Natural Resources and Other Assets

Creating new natural capital by transferring long term rights to forest assets to women can be a powerful poverty reduction strategy that also enhances biodiversity. Secure access or ownership rights to natural resources need to be pursued systematically as they pave the way for compensating local people for the environmental services these resources provide. Moreover, reorganising local rights over natural resources can help prevent conflicts. Similarly, access to new financial assets (through micro credit, local development funds etc.) has proved an important ingredient for self-empowerment and building confidence and self esteem. Ultimately the involvement of local women producers in policy negotiations, either directly or through partners, will result in more practical and realistic laws and regulations.

6.3.5 The Self-Help Group of Women must be Entrusted with Funds and Resources

UNDP (United Nations Developmental Programme) has long recognised that capacity building, self development and ownership can be considerably enhanced by entrusting women's groups with direct management of resources and funds. This has been borne out by several initiatives in India and Vietnam where funds are channelled through project implementation agencies, directly to interest groups promoted by the projects.

6.3.6 Rights-Based Approach should be Developed in Planning

Recent experience indicates that such an approach may be required when dealing with women. In all instances, training women on their rights has proved extremely useful as it increases their awareness of the claims they can make and provides opportunities for enhancing their political capital and their participation in the policy process. Similarly the establishment of legal defence funds has assisted women in asserting their claims and accessing their entitlements.

6.3.7 Isolated Successes must be Sealed up

Using resources to catalyse the linking up of local success stories and skills and benefits in developmental investment more evenly throughout the rural space has started bearing fruit in both poverty reduction and bio-diversity enhancement.

To enhance women's participation in environmental management for sustainable development; education, especially the environmental education is

required. Education must have an impact to change the traditional and conventional attitude of the public. Following are some suggestions to make our environment greener, cleaner and fair :

6.3.8 Different Kinds of Hobbies Especially Gardening should be Developed

We all are familiar with the fact that these days houses are very small. Our women can come forward by developing hobby of gardening. They can keep the environment to their houses healthy. Plants add to the beauty of the houses, provide freshness to the eyes are helpful in keeping the nearly environment clear. Tulsi plant is being worshipped since long. It is a good source of oxygen as well as this plant has medicinal value. Vegetables like Turai “Beans” does not need much space to grow. Besides keeping the surrounding atmosphere healthy, money is also saved. Saplings of plants can also be shared with neighbours. Again, our women can make use of their management ability by using empty cans, bottles, tins etc. As pots for growing the plants.

6.3.9 Garbage Boxes such as Dustbins should be Used

Many people just litter the streets with pieces of paper, oranges, banana peels, plastic bags etc. Usually, we are in the habit of throwing the rubbish and the waste after cutting the vegetables, grinning, wiping and cleaning the floor, on the municipal road, just outside our house. This creates nuisance, which gives birth to mosquitoes and Malaria or other viral diseases. The women who are managers of household should use the garbage boxes kept outside the municipality. If this habit is developed, we will not only be able to keep our houses clean but, the colony, the city, and our surrounding environment will also become orderly, tidy and healthy.

6.3.10 Non-Conventional Sources of Energy should be Used

India has limited resources of conventional energy. Dependency of our mass population for fuel on forests is additional cause for the vanishing of forest wealth and disturbing eco-systems. Wood remains the main sphere of energy in many urban and rural areas of the developing countries. In developing countries like India, women are collecting fuel wood from nearby forests, carrying it for domestic purposes and also selling it elsewhere to supplement their family incomes. The firewood etc. burnt in open country chulha wastes 82% of the fuel, since efficiency of heat utilisation is only 12% (UNICEF 1991). Out of the total amount of the wood harvested in India, 42.3% is burnt on firewood & charcoal. The soil, water and forest can be conserved if alternative kitchen fuel is provided. Our women can again contribute in this direction and come forward by using solar lights, solar geyser, solar cooker, smokeless chulhas etc.

6.3.11 The Cultural Norms of a Small Family should be Adopted

Today, the greatest problem, which the world community is confronting, is the problem of population explosion. It is the root cause of all other problems. If we follow the small family norm, we will be able to check the environment pollution also. Our late prime minister, Smt. Indira Gandhi echoed, “its our paramount duty to educate our rural masses, about the value and the benefit of family planning, so that we may put a check on population explosion and may lead a better healthy, hygienic and peaceful life”. Our women can shoulder this responsibility too.

6.3.12 Minimum Use of Electricity should be Practised

In near future, we will face another pollution i.e. light pollution. Our streets are flooded with Sodium lights, the rays of these lights are harmful for our eyes and body. We must make minimum use of light, only when it is need. Scientific data reveals that one unit of saving of electricity is equivalent to 1.25 unit of electricity generation. Use of compact Fluorescent lights are environment friendly. Our women again play a contributory role as they are the managers of their family.

6.3.13 Good Habits should be Developed among Children

Mother is the first teacher. It is she who plays an important role in the development of the personality of the child. She can install in future generations, a respect for nature and the value of bio-diversity. She can develop good habits in the child from the very beginning as :

1. Not to throw the rubbish here and there.
2. Keep the things in a tidy manner.
3. Not to spit here and there.
4. To have love and respect for the nature.
5. Not to spoil and harm the plants, trees, during their visits to gardens, public parks and school garden etc.
6. Not to allow the children to waste to paper – the children are usually in habit of tearing away papers from their note books, a mother can keep a check on

this bad habit of the child. She can make them understand that for paper production the wood is used and deforestation can bring unhappiness by disturbing the eco-system.

6.3.14 Avocation for Farming should be Developed among New Generations

Tribes in dense forests wherein the villagers clear small trees, the branches of the big trees bushes and burn them for getting cultivating land practise it. Whenever the natural fertility declines they repeat the same practice at another place. This practice affects the forest wealth. Women of these areas with their men folks may contribute much to conserve environment provided they should be aided with the modern agricultural inputs like fertilisers, seeds, and other agricultural equipment etc.

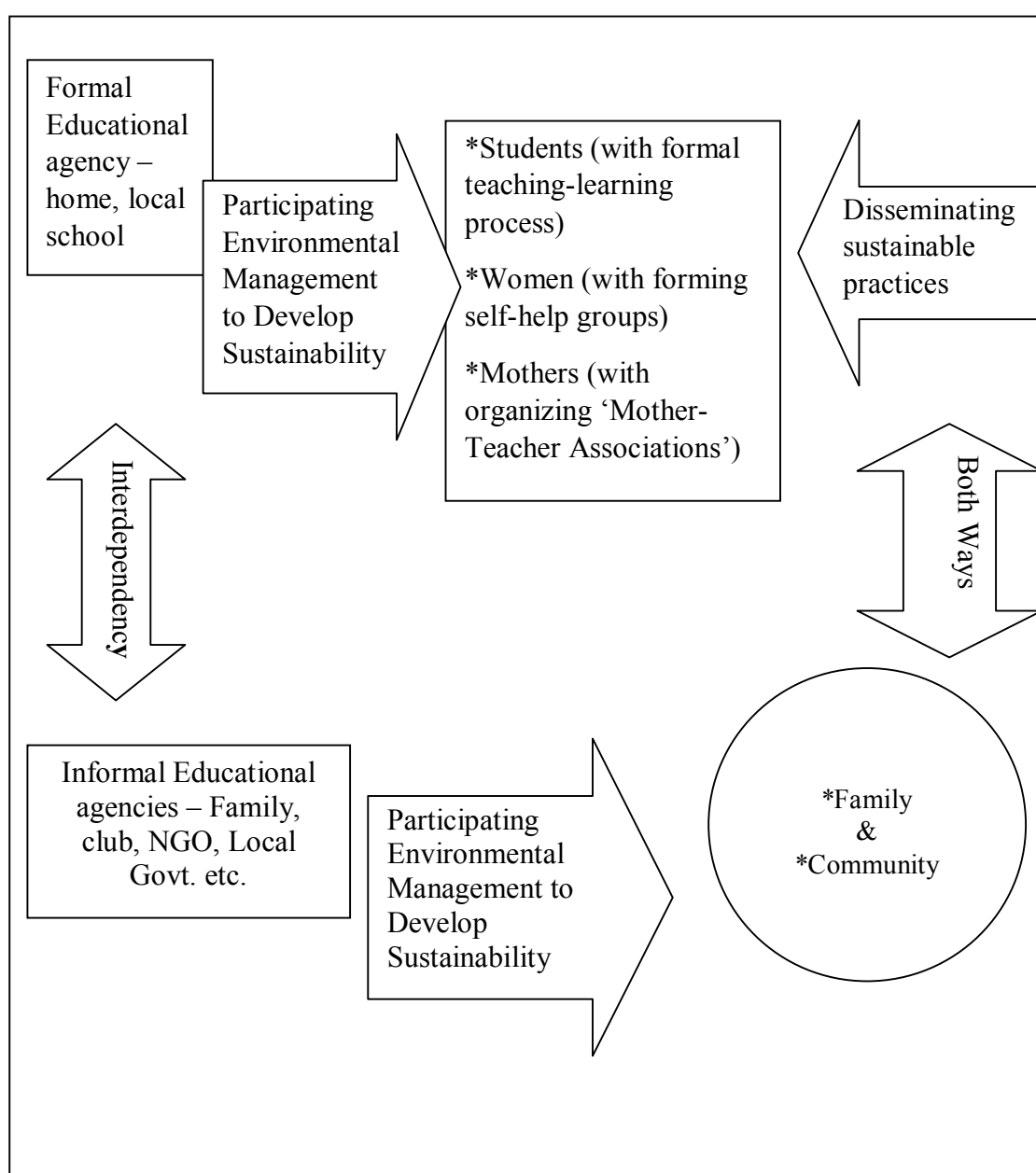
6.3.15 Women should be Enriched with Traditional Knowledge

India has a rich tradition of indigenous medicine. Ayurveda, Siddha, Unani and Amchi – besides a vast collection of living traditions of ethno-medicine scattered across the country. Even today a large percentage of rural households in

India utilise home remedies, the recipes of which have been handed down from generations. Since women are more likely to nurture the needs of the family, they tend to be primary practitioners of the indigenous knowledge. Surveys have revealed that a vast majority of local folk healers are women. Economic advancement within a community and urbanisation factors propelling larger numbers of young men in rural areas to migrate. Women are thus becoming responsible for maintaining indigenous knowledge of traditional medicine in rural areas.

These initiatives may be figured with a dynamic diagram, and that will not only disseminate sustainable practices but also develop a healthy and inter-dependable bondage among local agencies of education (both formal and informal), especially by the women. It must work as a dynamic process shown in the following diagram:

Diagram 6.1. Interaction of Women with Society in Environmental Management



6.3.16 Engaging Women for Sustainable Development

Engaging can be defined as a “multi-dimensional social process that helps people to gain control over their own lives. it is a process that power (i.e. the capacity to implement) in people, for use in their own lives, their communities, and in their society, by acting on issues that they define as important” (Page and Czuba,1999).

The discussion about Women’s participation in social and environmental management for sustainable development is very relevant. Sustainable development is development, which meets the needs of the present without compromising the ability for future generations to meet their own needs.

6.3.17 Create an Enabling Environment

Women’s participation requires an enabling and supportive Environment. This includes removing the obstacles and barriers to equal participation and rewards for women. Creating an enabling and supportive Environment encompasses action at all levels, as well as initiatives and support by the private sector, civil society, family and friends.

A dual approach for positive action and gender mainstreaming is most beneficial to create an enabling Environment for women.

6.3.18 A Safe and Healthy Environment for Women

The most basic and important premise for women’s participation is peace and the absence of violence, including domestic violence. A safe environment also means not being exposed to health risks created through environmental degradation

such as air, bad water pollution. Women works to safeguard the environment and human health, working with the family members to reduce pollution in order live happily.

6.3.19 A Life Course Approach to Social Security and Support

Women are primary care givers for children, disabled and elderly family members. This unpaid ‘labour for love’ puts women at a disadvantage over the course of their lifetimes. They spend fewer hours in paid employment than men and often have interrupted employment records due to years taken out of the labour force to care young children. This penalises them in old age as they will have acquired fewer years of pension contributions. Since Women’s life expectations are higher than men’s, they spend more years depending on social security than men, often needing long-term care which puts them at additional risks of old age poverty.

6.4 Limitations of the Study

- a) The study has been restricted only four Gram-Panchayets and four Municipalities in the District of Nadia.
- b) A large number of village women working in the field of agriculture and women in service have been taken for the study. Thus findings of the study cannot claim for generalisation.
- c) The rapport has been made with the samples but tribal women have some conservation, which may have some reflections on the responses.
- d) In some situations, electronic gadget has been used at the time of collection of data which may have some impact on the responses.

6.5 Suggestions for Further Research

- a. Studies may be conducted in different categories of Women separately for Socio-Political Employment.
- b. Comparative study may be done on Gender Participation in Environmental Management.
- c. Self-Help Groups and Sustainable Development may be studied thoroughly.
- d. National Policy for the empowerment of Women and the Implications of those Policies can be thoroughly chalked out.
- e. Studies may also be conducted on Women and Minority Groups in Environmental Management etc.
- f. Studies may also be conducted on Women and Environment Awareness.
- g. Studies may also be conducted on Women, Natural Greenery and Eco-friendly Activities.
- h. Studies may also be conducted on studies may also be conducted on Women and Household Management.
- i. Studies may also be conducted on Women, Health, Sanitation and Nutrition.
- j. Studies may also be conducted on Women and Animal Husbandry.

- k. Studies may also be conducted on Women and Solid Waste Management.
- l. Studies may also be conducted on Women and their Participation in Reducing Pollution.
- m. Studies may also be conducted on Women and Empowerment.
- n. Studies may also be conducted on Chipko Movement and the Role of Women.
- o. Studies may also be conducted on Appiko Movement and the Role of Women,
- p. Studies may also be conducted on Narmada Bachao Andolon and The Role of Women,
- q. Studies may also be conducted on Green Belt Movement and The Role of Women,
- r. Studies may also be conducted on Navdanya Movement and The Role of Women,
- s. Studies may also be conducted on Kenyan Land Takeover etc. and The Role of Women.



Picture 1. A Woman in Rowtari Block is Preparing her Kitchen Garden.



Picture 2. A Village Woman in Fatepur Block is Engaging Herself in Animal Husbandry.



Picture 3. A Village Woman in Chapra Block is Collecting Water from Pond for Household Use.

Picture 4. A Village Woman in Nokari, Ranaghat Block is Collecting Fuel for Household.



Picture 5. Water is Being Polluted by Day to Day Use of Local People in Chakdaha Municipality Area.



Picture 6. An Urban Women in Ranaghat Municipality Area is Earning for Livelihood by Bidi Binding.

Picture 7. An Urban Women in Nabadwip Municipality Area is Earning for Livelihood by Weaving.



Picture 8. Solid Wastes are Being Collected by Female Children in Kalyani Municipality.

Picture 9. Urban Female Children are Earning for Their Livelihood on Open Street in Ranaghat Municipality.



Picture 10. Water is Being Contaminated by Solid Wastes Even in Rural Areas in Rowtari Gram Panchayet.

REFERENCES

- Abbasian, E., Broghani, M. and Razmi, J.M. (2012). *The Relationship between Women's Empowerment and Environment*, Anmol Pub., New Delhi, pp. 22-25.
- Abraham, Taisha and Malashri Lal (1995). *Female Empowerment: Impact of Literacy in Jaipur District, Rajasthan*, Har-Anand Pub. Ltd., New Delhi, pp. 35-40.
- Abzug, Bella. (1995). *Women and the Environment*. International Authors Series. New York, pp. 85-90.
- Adebayo, A.A and Anyanwu S.O (2005). *Women Participation in Environmental Protection and Management ; Lessons from Adamawa State in Towards the Sustainable Environmental Management*, Paraclette Pub., Yola, pp. 22-25.
- Afshar, H. (1991). *Women, Development and Survival in the Third World*. Longman, Pub., New York. pp. 79-99
- Agarwal, B (1981). *Agricultural Modernization and Third World Women: Pointers from the Literature and an Empirical Analysis*. Geneva: ILO, pp. 15-17.

- Agarwal, B. (1985). *Neither Sustenance nor Sustainability; Agricultural strategies, Ecological Degradation and Women in Poverty*, Zed books, London, pp. 307-330.
- Altman, Irwin and Arza, Churchman (1994). *Women and the Environment*. New York: Plenum Press, pp. 10-13.
- Anand, Sudhir and Sen, Amartya.(2000). *Human Development and Economic Sustainability*, World Development, Anmol Pub., New Delhi, pp. 7-10.
- Anderlini, Naraghi, Sanam (2008). *Women Building Peace*, Viva Books Pvt. Ltd., New Delhi-002, pp. 17-22.
- Anyanwu, S.O. and Adebayo, E.F. (2000). *Women in Agriculture in Adamawa State. An Unpublished Manuscript*, Federal University of Technology, Yola, pp. 13-20.
- Arnot, Madeline (2002). *Reproducing Gender – Essays on Educational Theories and Feminist Politics*, London Press Pub., pp. 28-33.
- Aruna Goel (2004). *Education and Socio-Economic Perspectives of Women Development and Empowerment*, Deep and Deep Publications, New Delhi, pp. 12-15.
- Arya, Sadhna (2000). *Women, Gender Equality and the State*, Deep and Deep Pub., New Delhi, pp. 18-22.

- Athman, J. A., & Monroe, M. C. (2001). *Elements of Effective Environmental Education Programs*. Washington D.C.: U.S. Department of Education, pp. 14-19.
- Azim, Saukath (1997). *Muslim Women: Emerging Identity*, Rawat Publications, Jaipur, pp. 21-23.
- Azumah, A. (1988). *Women and Agricultural Development in Nigeria, Role of Women in Development*, Kaduna Pub., pp. 12-18.
- Bailey, C. J. (1998). *Congress and Air Pollution, Environmental Policies*, New York, Manchester University Press, pp. 23-25.
- Bennett, Lynn. (2002). *Using Empowerment and Social Inclusion for Pro-Poor Growth: A Theory of Social Change*, Working Draft of Background Paper for Social Development Strategy Paper. Washington, DC: World Bank, pp. 45-47.
- Best, W. J. and Khan, V. J. (2011). *Research in Education*, PHI Learning Private Limited, New Delhi – 110001, pp. 118-121.
- Bisnath, Savitri and Diane Elson (2001). *Women's Empowerment Revisited*, UNIFEM-Progress of the World's Women Biennial Report, New York, pp. 13-20.
- Biswas (Bhaumik) , Manjari (2010). *The status of Women in India*. Abhijeet Pub. Delhi.110094, p. 51.

- Blewitt, J. (2005). *Education for Sustainable Development, Governmentality and Learning to Last. Environmental Education Research*, pp. 173-185.
- Bowman, H. A. (1954). *Marriage for Moderns*, McGraw Hill, New York, pp. 17-23.
- Brown, Lynn. R., and Haddad L. (March 1995). *Time Allocation Patterns and Time Burdens: A Gender Analysis of Seven Countries*, McGraw Hill, New York, pp. 25-27.
- Brydon, L. and Chats (1985). *Women in the third World Gender Issues in Rural and Urban Areas*. Edward El gar Publishing, Hants, England, pp. 28-30.
- Canadian Commission for UNESCO (2006). *United Nations Decade of Education for Sustainable development (2005-14): Canada's Responses to the UNESCO Questionnaire*. Ottawa: Council of Ministers of Education, Canada and the Canadian Commission for UNESCO.
- Canadian Commission for UNESCO (2006). *United Nations Decade of Education for Sustainable Development (2005-14)*.
- Chakraborti D, Mukherjee S.C (2003). *Arsenic Groundwater Contamination in Middle Ganga Plain*, Starling Pub., New Delhi, pp. 18-25.
- Chandra, Rakesh (2002). *Women Empowerment in India, Milestones & Challenges* Pub., University of Lucknow, Lucknow, pp. 35-37.
- Chandra, S. S. and Sharma, Rajendra (2004). *Research in Education* : Atlantic Pub., New Delhi – 110002, pp. 220-230.

Chaubey, S. P. (2009). *Ideals of Great Western Educators*, Neelkamal Pub. Pvt. Ltd., p. 49.

Chitabhami, T.K (2007). *Environmental Education*, Authors Press, New Delhi-002, pp. 13-19.

Chitkara, M.G (2001). *Women and Social Transformation*, APH Publishing Corporation, New Delhi, pp. 22-25.

Chitrabhanu, T. K. (2007). *Environmental Education*, Authors Press, New Delhi, pp. 32-35.

Colby, M. E. (1991). *Environmental Management in Development : The Evolution of Paradigms*, Oxford University Press, pp. 47-51.

Cranney, Breda (2001). *Local Environment and Lived Experience: The Mountain Women of Himachal Pradesh*, Sage Pub., New Delhi, pp. 74-78.

David, H. (2003). *Chipko Andolan Gandhi in his Time and Ours: the Global Legacy of His Ideas*. Hurst & Co. Pub., p. 221.

Desai, N. and Krishnaraj, M. (1990). *Women and Society in India*, South Asian Books, p. 96.

Desai, Neera. (2001). *Women in Indian Society*, National Book Trust, Pub. New Delhi-110 016, p. 103.

Dixon, J. and Fallon, L. A. (1989). *The Concept of Sustainability: Origins, Extensions and Usefulness for Policy*. Washington, DC: World Bank.

- Duflo, Esther, (2011). *Women's Empowerment and economic development*, Nber Working Pub., pp. 15-22.
- Dunkelman and Davidson (1998). *Managing Natural Surroundings and Women*, Earth Scan Pub. Ltd., London, pp. 15-16.
- Eblen, R. and Eblen, R. (1994). *The Encyclopedia of the Environment*. New York: Houghton Mifflin Company, pp. 432-433.
- Falola, J.A. (1996). *Towards the sustainability of Women and Technological Interventions in Rural Production System*. Bayero University, Kano, pp. 22-28.
- FAO (1994). *Improving the Relevance and Effectiveness of Agricultural Extension activities for Women*. United Nations, New York, pp. 72-76.
- Franzen, A. (2003). *Environmental Attitudes in International Comparison: An Analysis of the ISSP Surveys 1993 and 2000*. Social Science Quarterly, pp. 297-308.
- Fulekar, M.H. (2005). *Chemical Pollution- A Threat to Human Life and Environment*, Authors Press, New York, pp. 78-82.
- Ghanta, Ramesh & Bhaskara Rao, D (2012). *Environmental Education, Problem And Prospects*, Discovery Pub. House Pvt. Ltd.
- Gnanadevan, R (2007). *Environmental Awareness of Higher Secondary Students. Research and Reflection on Education*. Discovery Pub. House Pvt. Ltd., pp. 72-74.

- Gonsalves, Lima (2001). *Women and Human rights*, APH Pub. Corporation, New Delhi, pp. 101-105.
- Gopalan, Sarala (1995). *Women and Employment in India*, Har-Anand Pub., Delhi, pp. 77-79.
- Goyal, M.K. (2002). *Our environment*. Vinod Pub., Meerut, UP, pp. 78-82.
- Hannan, Ferocious and AKM Abdul Hannan Buiyan (1994). *Role of Women in Agriculture: Some Conceptual Issues*, Konark Pub., New Delhi, pp. 89-91.
- Hardy T., Wiley, John and Sons (2003). *Climate Change: Causes, Effects and Solutions*, Hub. Pub., England, pp. 95-99.
- Heyzer, Noeleen (1992). *Gender Issues in Development Analysis, Policy and Planning: Experiences from Asia and the Pacific*, The Hague: Institute of Social Studies Advisory Services, pp. 25-32.
- Indirensan , Jaya (2002). *Education for Women's Empowerment*, Konark, Pub. Pvt. Ltd. P.7.
- Iyer, Justice Krishna (1993). *Human Right to Woman, Women-March Towards Dignity-Social and Legal Perspective*, Regency Pub., New Delhi, pp. 78-82.
- Jandhyala, B.G. Tilak (1992). *Inequality in Education by Sex in India, in Chetana. Women's Struggles for Equality and Emancipation*, Discovery Pub. House, New Delhi, pp. 10-13.

- Jayaweera, Swarna, (2010). *Women, Education and Empowerment in Asia, Gender and Education*, Black Berry Pub., pp. 411-424.
- Jeejebhoy, Shireen J (1995). *Women's Education, Autonomy, and Reproductive Behaviour: Experience from Developing Countries*, VEdams Books Pub. Ltd., New Delhi, pp. 75-82.
- Jethmalani, Rani(1995). *Kali's Yug: Empowerment, Law and Dowry Deaths*, Har-Anand Pub. Ltd., New Delhi, pp. 17-20.
- Joseph, Ammu and Kalpana Sharma (1994). *Whose News? The Media and Women's Issues*, Sage Pub., New Delhi, pp. 25-35.
- Joshi, G. (1981). *Forest Policy and Tribal Development*. Social Action, pp. 446-468.
- K.D.Roza (2010). *Empowerment of Women: The Impact of Employment*; Abhijeet Pub. Ltd., Delhi-094, pp. 86-91.
- Kapur, Promila (2002). *Socio-economic Empowerment of Women in the Family*, Department of Social Work, New Delhi, pp. 17-21.
- Karmakar, Sumati (2001). *The Better Half: Mothers, Sisters, Wives and Homemakers*, Dominant Pub. and Distributors, New Delhi, pp. 25-28.
- Karpoff, M. Jonathan (1993). *Strategy to Balance Environmental Growth.*, Rinehart Pub., New York, pp. 117-157.
- Khanna, S.K. (1998). *Women and the Human Rights*, Commonwealth Pub., New Delhi, pp. 17-21.

- Krishnamacaryaulu, V.I Reddy, G.S (2007). *Environmental Education*, Neelkamal Pub. Pvt. Ltd., Hydrabad, pp. 32-42.
- Kumar, A. (2012). *Women and Sustainable Development: Women's Empowerment is a Key Factor for Achieving Sustainable Economic Growth*. Oxford University Press, pp. 75-86.
- Kwagala, B. (1999). *Katwogo and Kawaala Low-Income Urban. Settlements in Kampala, Uganda: Gender and the Management of Urban environmental Health on D.L. Smith, women managing resources*. Mazingira Institute, Nairobi, pp. 90-92.
- Lalage, B.(1990). *Action Aid Development Report Preparing the Future in Women, Literacy and Development*. Somerset,London, pp. 1-10
- Leopold, Aldo (1949). *Environmental Management*, New Bury Park, Winston. pp. 36-43.
- Maye. (1994). *Women: The Resource Managers*. UNEP, Vol. 6 No. 4, pp. 23-24.
- McAllister Opinion Research (2006, April 3). *The Sustainability Survey, Canadian Public 2006 and Canadian Thought Leaders 2006*. Top line Report. Vancouver: McAllister Opinion Research, pp. 25-32.
- McNaughton, M. J. (2004). *Educational Drama in the Teaching of Education for Sustainability*. Environmental Education Research, pp. 139-155.
- Menno, Lattice (1998). *Women Empowerment and Challenge of Change*, Concept Pub. Co., New Delhi, pp. 75-82.

- Michalos, A.C. (2000). *Evaluation of Equality Policies for the Status of Women*. Social Indicators Research, pp. 241-277.
- Mishra, A. and Tripathi (1978). *Chipko Movement: Uttaranchal Women's Bid to Save Forest Wealth.*, Gandhi Book House, New Delhi, pp. 75-82.
- Misra, K. Kamal (ed.) (2006). *Recent Studies in Indian Women*, B. N. Pub. Pvt. Ltd., New Delhi, pp. 32-35.
- Mohammed, N. (1991). *Pattern of Land use in Sharada, Kano and the Implication of Urban Expansion on Fringe land*. An unpublished M.sc thesis, Bayero University, Kano. p. 167.
- Mohanty, Manoranjan (ed.) (2004): *Class, Caste, Gender*; Sage Pub., New Delhi, pp. 22-25.
- Monga, Nivedita M. C. (1998). *Gender Bias in the Law, Gender Inequalities, Child Survival India*, Anmal Pub., Delhi, pp. 9-12.
- Moser, C.O.N.(1993). *Gender Planning and Development: Theory, Practice and Training*. Routledge Pub., London, pp. 25-28.
- Moser, Joance, (1991). *Management and Maintenance of the Natural Environment, Power and Infrastructures*, Konark Pub. Ltd., Delhi, pp. 50-51.
- Mukherjee, K. K. (1972). *Some Great Educators of the World*, Das Gupta and Co. Pvt. Ltd., p. 269
- Mukhopadhyay, S. (2000). *Chemical Pollution and its Alternates in Agriculture*. West Bengal State Book Board, Kolkata. pp. 12-15.

- Narasaiah, Lakshmi M. (2001). *Women, Children and Poverty*; Discovery Pub. House, New Delhi, pp. 18-25.
- Nebasina, Ngwa E. (1995). *The Role of Women in Environmental Management, an Overview*, Springlet Pub., New Delhi, pp. 35-37.
- Neumayer, E. (2010). *Human Development and Sustainability*, Human Development Report, UNDP.
- Pahi-Wost, C. (2007). *The Implications of Complexity for Integrated Resource Management*, Narosa Pub., New Delhi, pp. 28-32.
- Pal. G. (1998). *Environment and Pollution*, Das Gupta and Company Pvt. Ltd. , Kolkata, pp. 75-80.
- Pamecha, Suman (2002). *Women on Economic Front*, Agrotech Pub., Udaipur, pp. 17-19.
- Pande, G.S (2001). *Political Participation of Women in India: Implementation of 73rd and 74th Ammendments*, New Royal Book Co., Lucknow.
- Pande, S (2007). *Environmental Awareness between Rural and Urban Child: A Comparative Study*. University Press, New Delhi, pp. 11-14.
- Rao Bhaskara Digumarti & Rao Pushpalatha Digumarti (2011). *Women, Education & Empowerment*, Discovery Pub. Home; New Delhi-002, pp. 5-7.
- Razavi, S and Miller, C (1997). *Conceptual Framework for Gender Analysis within the Development Context*. Orient Pub., New York, pp. 17-22.
- Report of the University Education Commision* , (Dec 6 , 1948). New Delhi, p. 11.

- Richard Peet and Michael Watts (1996). *From Chipko to Uttaranchal: Haripriya Ranjan Liberation ecologies: environment, development, social movements*, Routledge Pub., New Delhi, pp. 205-206.
- Rohwedder, R. (2004). *The Pedagogy of Place: Campus Sustainability and the Environmental Technology*, Sonoma State University. pp. 1-7.
- Rose, E. (1999). *Consumption Smoothing and Excess Female Mortality in Rural India*, Review of Economics and Statistics, pp. 41-49.
- Ross, A. D. (1959). *Education and Family Change*, Kanisk Pub., New Delhi, pp. 39-44.
- Roy, Debal Singha (ed.) (2001): *Social Development of Marginalised Groups*, Sage Pub., New Delhi, pp. 75-78.
- Roy, Kalpana (1999). *Women's Oppression and Protection of Law*, Rajat Pub., New Delhi, pp. 18-22.
- Saeed, Fouzia (2001). *Taboo: The Hidden Culture of a Red Light Area*, Oxford University Press, New Delhi, pp. 32-38.
- Sahay, Sarita (2002). *Tribal Women in the New Profile: Vis-à-vis their Non-Tribal Twins*, Anmol Pub., New Delhi, pp. 42-48.
- Saxena, Kiran (2000). *Women and Politics*, Gyan Pub. House, New Delhi, pp. 15-18.
- Schaltegger et al. (2003). *An Introduction to Corporate Environmental Management, Striving for sustainability*, Green Leaf Pub., pp. 53-55.

Sen, A. (1990). *More Than 100 Million Women Are Missing*, The New York Review of Books, pp. 20-21.

Sen, Amartya. (1999). *Development as Freedom*. Oxford: Oxford University Press, pp. 42-45.

Sen, Geeta. (1993). *Women's Empowerment and Human Rights: The Challenge to Policy*. World's Scientific Academies, New Delhi, pp. 48-52.

Sharma, A. R. (1996). *Environmental Education*, Kaniska Pub., New Delhi. pp. 21-32.

Shoma A. Chatterji (1988). *The Indian women's Search for an Identity*, Vikas Pub. House Pvt. Ltd., New Delhi, pp. 42-48.

Shrivastava, K. K. (2008). *Environmental Education, Principals, Concepts and Management*, Kanishka Pub., New Delhi, pp. 17-23.

Siddiqi, Fatima and Ranganathan. (2001). *Women and Human Rights*, Kanishka. Pub. New Delhi- 110 002, p. 68.

Singh, K.U & Nayak, K.A (2010). *Women Education*, Commonwealth Pub. New Delhi-002, pp. 72-78.

Singh, S. K. (2008). *Environmental Education and Ethics.*, Amrit Prakashan, Varanasi, pp. 22-28.

Singh, Sukanya Nihal (2001). *Prospectus for Women's Empowerment: Dynamics of Enablement*, Commonwealth Pub., New Delhi, pp. 18-24.

Sixth All India Educational Survey (2002-08) : NCERT, New Delhi, www.ncert.org.

- Soundarapandian, M (2005). *Environment, Degradation And Rural Poverty*, Discovery Pub. House, New Delhi-002, pp. 12-18.
- Stromquist , P. Nelley (1995). *Some Reflections on the Empowerment of Women* , Lucita Lazo pub. Nellore , p.13.
- Strong, R. (1959). *An Introduction to Child Study*, Macmillan Pub., New York, pp. 157-170.
- Sudha, T (2011). *Education, Employment & Rural Women in India*, Global Research Pvt. Ltd., New Delhi-002, pp. 12-17.
- Thampapillai, Dado, J. (2002). *Environmental Economics Concepts, Methods and Policies*, Oxford University Press, pp. 22-28.
- Ugbomeh, George M.M, (2001). *Empowering Women in Agricultural Education for Sustainable Rural Development*, Oxford University Press, pp. 13-18.
- UNESCO (2002). *Education for Sustainability – from Rio to Johannesburg : Lessons Learnt from Decade of Commitment*.
- Uzzell, D., Poi, E., & Badenas, D. (2002). *Place Identification, Social Cohesion and Environmental Sustainability*. Pluto Press Pub., pp. 26-53.
- Vandana, Shiva (2002). *Ecological Crisis and Water Wars: Privatization, Pollution and Profit*. Pluto Press Pub., p. 3.
- Varghese, Jaiman (2012). *Women Empowerment Through Literacy Campaign*, Concept Pub. Company, New Delhi-059, pp. 18-22.

Venkataiah, S., (ed.) (2001). *Women Education*, Anmol Publications, New Delhi.
pp. 65-75.

Vidya, K.C. (1997). *Political Empowerment of Women at the Grassroots*, Kanishka
Pub., New Delhi, pp. 90-93.

WCED (1987). *Our Common Future*, Oxford University Press.

Wieringa, S. (1994). *Development and Change*. Blackwell Pub., UK, pp. 129-148.

William, A. N. (2001). *Green Development : Environment and Sustainability*.
Routledge Pub., New Delhi, p. 375.

World Development Report (1990). New York: Oxford University Press. World
Development Report, 2012, Gender Equality and Development Pub.

Xaxa, Virrginius (2001). *Empowerment of Tribes, Social Development of
Marginalized Groups*, Sage Pub., New Delhi. pp. 89-92.

Articles

- Abou El-Azm M. (2004). Case Study on Raising Awareness of Women's Role in Environmental Issues in Fayoum, *CIHEIM*, 64 : 67-71.
- Abou-El-Azm, M. (2004). Case Study on *Raising Awareness of Womens' Role in Environmental Issues in Fayoum*, *Humanities and Social Sciences Paradigms*, 2(1) : 13-14.
- Aladuwaka, Seela and Momsen, Janet (2010). Sustainable Development, Water Resource Management and Women Empowerment, *Humanities and Social Sciences Paradigms*, 2(1) : 10-14.
- Ali, Romana and Sinha, Bipasha (2013). A Study of Environmental Awareness and Ecological Behaviour among Female B.Ed. Students. *Indian e-Journal on Teacher Education*. 1(1) : 14-15.
- Aminsad, Z. (2013). Survey on *Environmental Awareness among Environmental Specialist and Secondary School Science Teachers in Malaysia*, *International Journal of Behavioural Social and Movement Sciences*, 3(1) : 80-81.
- Ampumuza, C. (2008). Women Empowerment through Tourism, *Journal on Intervention Study*, 2(2) : 25-31.
- Angelo, D., Caroline (2012). The women, Water and Sanitation Crises, *International Journal of Sociology*, 4(2) : 86-90.

- Anita, Thatus (2012). A Study on Role of Women in Controlling Environmental Pollution at Household Level, *Journal of Humanities and Social Sciences Paradigms*, 2(1) : 30-35.
- Arunkumar J. (2013). A Study on Assessment of Environmental Awareness among Teacher Trainees in Teacher Training Institutes. *International Journal of Research in Social Sciences*. USA, 2(3) : 312-321.
- Asiya Faisal Khan, Mohd Faisal Khan (2013). A Study on the Awareness of Product Ingredients among Women Skincare Users in State Of Madhya Pradesh, *IOSR Journal of Business and Management*, 14 (4) : 65-72.
- Azizi, M., M. Wahab, R. Huron and M. Nawawi (2010). Environmental Awareness and Attitude among Iranian Students in Malaysian Universities *EnvironmentAsia*. 3(1): 1-10.
- Bentley, M. (2014). The Household Management in Rural North India, *International Journal of Sociology and Anthropology*, 2(2) : 86-91.
- Bloom, J. (2014). Nutrition and Eating Habits of Women, *Journal of Health Awareness and Social Science*, 4(2) : 81-86.
- Day, J. (2007). Elite Womens' Household Management, *The Economic Gender*, 1(1) : 11-15.
- Diaz, E. (2008). Self-rated Health among Mayan Women Participating in a Randomize Intervention Trial Reducing Indoor Air Pollution. *Research on Environmental Science*, 2(2) : 40-45.

Ernesto Lasso De Lavega (2004). Awareness, Knowledge, and Attitude about Environmental Education. The University of Central Florida Orlando, Florida.

Gainesville (2014). Air Pollution and by Increasing Risk for Hypertension in Pregnant Women. *Disaster Risk Management and Environment*, 1(1) : 5-9.

Geerlings, E. (2013). Women's Work in Agriculture, Animal Husbandry, *Journal on Sustainable Development*, 3(1) : 83-93.

Glenton O. Guiriba (2010). The Role of Women in Environmental Conservation in Sorsogon Province, Philippines. *4th Asian Rural Sociology Association (ARSA) International Conference*, pp : 106-112.

Gupta, Bandana and Sharma, Sanjay (2014). Awareness, Attitude and Practices towards Environment Among Women in the Rural Areas of Rajouri (J&K), *Research Paper on Environmental Science*. 4 (2) : 36-38.

Hoerisch, H. (2002). A Comparative Study on Environmental Awareness and Environmentally Beneficial Behaviour in India, *The International Journal of Engineering And Science*, 2 (3) : 34-38.

Ivanova, P. (2007). Womens' Roles in the Houses, *International Journal of Household Management*, 4(2) : 70-76.

Jatindra, P. K. (2009). E-Waste Management : A Case Study of Bangalore in India. *Research on Environmental Sciences*, 4(2) : 15-19.

- Jayanta Mete (2013). A Study of Environmental Awareness and Ecological Behaviour among Female Student Teacher in B.Ed. Course, *Indian e-Journal on Teacher Education*, 1(1) : 31-41.
- Kempen, E. (2012). A Study of the Relationship between Health Awareness, Life Style Behaviour and Food Level Usage in Gautengin, South Africa, *International Journal of Education and Informational Studies*, 4(1) : 14-18.
- Kengistie, B. (2000). Community Based Assessment on Household Management. *International Journal of Information Studies*, 4(1) : 25-31.
- Krishna, A. (2013). Case Study of Solid Waste Management at a College Campus, *Asial Rural Sociology Association*, 4(1) : 82-86.
- Kumar, Sanjay (2013). Environmental Awareness among Rural Folks of Hamirpur District, H.P., *The International Journal of Engineering And Science*, 2 (1) : 81-83.
- M. Nuratu (2012). Gender Participation in Environmental Management in Tofa Local Govt. Area of Kano State, , *International Journal of Behavioural Social and Movement Sciences*, 3(2) : 40-45.
- Nagra, Vipinder (2013). Environmental Education Aawareness among Senior Secondary School Teachers, *International Journal of Behavioral Social And Movement Sciences*, 2 (1) : 242-251.
- Neelam, Dahiya (2013). A Study of Environmental Awareness and Attitude towards Environmental Degradation of Senior Secondary School Students,

International Journal of Engineering, Management, Humanities and Social Sciences Paradigms, 2(1) : 15-26.

Poonam Mahajan and Nidhi Darbari (2014). A Comparative Study of Environmental Awareness of School Students in Relation to Standard and Sex, *International Journal of Education and Information Studies*. 4(1) : 5-7.

Poul, H. (2012). The Study of Urban Environmental Management with Womens' Participation to Preserve Green Spaces, *Disaster Risk Management and Environment*, 2(1) : 14-18.

Ratcke, M. (2013). Case Study on Solid Waste Management at Agartala City, *Indian Journal of Sociology*, 5(3) : 68-72.

Raut, C. (2004). Estimation on Women Labour in Animal Husbandry Activities, *International Journal of Anthropology*, 2(1) : 78-83.

Sankar, Siddhatha (2006). Indoor Air Pollution and Women Health in the Informal Sector. *East Journal of Education*, 2(2) : 37-53.

Sengupta, Madhumala, Das Jayanti and Maji Pintu (2010). Environmental Awareness and Environment Related Behaviour of Twelfth Grade Students in Kolkata: Effects of Stream and Gender, 5 : 1 – 8.

Shubhangna, Sharma (2009). Health Awareness of Rural Adolescent Girls: An Intervention Study, *J Soc Sci*, 21(2): 99-104.

Swallow, Brent (2008). Local Organisation and Gender in Water Management, *Journal of International Development*, 1(1) : 8-12.

- Tanzania (1995). Health through Sanitation and Water, *Journal of International Development*, 1(1) : 12-15.
- Tewari, B. K. (2004). Environmental Literacy and Awareness among the women of Mountain Region of Uttaranchal, India: A Situational Analysis. *The International Journal of Engineering And Science*, 2 (3) : 75-78.
- Thresiamma Varghese (2011). Women Empowerment in Oman: A study based on Women Empowerment Index, *Far East Journal of Psychology and Business*, 2 (2) : 37-53.
- Tripathy, A. (2009). Women's Economic Contribution through Their Unpaid Household Work, *Journal of Sociology and Science*, 21(2) : 75-82.
- Upadhyay, S. (2011). Participation of Farm Women in Animal Husbandry, *Journal on Environmental Conservation*, 2(1) : 18-22.
- Wakar Amin and M. Mudasir Naqshbandi (2013). Effective Awareness Generation Methods for Rural Sanitation Campaign: A Study from a Village in Haryana, *International Journal of Sociology and Anthropology*, 5(3) : 78-83.
- Wickramaringhe, Anoja (1997). Women and Minority Groups in Environmental Management. *Journal on Minority Groups*, 1(1) : 10-11.
- Zugravu, A. (2012). Eating Habits and Influential Factors for Mothers and Children in Romania, *Journal of Psychology and Business*, 2(2) : 54-59.

Website

<http://www.springerlink.com> (content) gt 1 km 1460361x21k (retrived on 26-4-2011).

The United Nations Environment Programme (UNEP) on Women and the Enviroment (2005). From [http://www.unep.org/women_watch / forum\) review/environment/index.html](http://www.unep.org/women_watch/forum/review/environment/index.html), (accessed on 01.4.2011).

Akwa labaris, (2009) Women involvement in Environmental Protection and Management : A case of Nasarava state, from <http://www.jsd-africa.com/jsda/v10>, (accessed on 01.4.2011).

<http://westcoastdm.co.za/about/environmental-management>, retrieved on 5-01-2014.

[http://www.neyahotels.com/en/consciencia –ambiental.html](http://www.neyahotels.com/en/consciencia-ambiental.html), retrieved on 5-01-2014.

<http://homeguides.sfgate.com/ecofriendly-mean-78718.html>, retrieved on 5-01-2014.

<http://www.wisegeek.com/what-is-animal-husbandry.htm>, retrieved on 5-01-2014.

<http://www.britannica.com/EBchecked/topic/553362/solid-waste-management>,
retrieved on 5-01-2014.

Olanike, (March 30, 2010):Empowering women through Environmental Management from <http://www.worldpulse.com/mode/19150>, (accessed on 31.3.2011)

<http://www.jstor.org/stable/4315726>, retrieved on 25-4-2011.

Burney, S. and Schnarr, E. (2012, June 16), *Women and Sustainability: Recognizing the Role of Women at Rio+20*, retrieved on 5th March, 2013 from [http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing- the-role-of-women-at-rio20](http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing-the-role-of-women-at-rio20)

Burney, S. and Schnarr, E. (2012, June 16), *Women and Sustainability: Recognizing the Role of Women at Rio+20*, retrieved on 5th March, 2013 from <http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing-the-role-of-women-at-rio20>.

Burney, S. and Schnarr, E. (2012, June 16), *Women and Sustainability: Recognizing the Role of Women at Rio+20*, retrieved on 5th March, 2013 from <http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing-the-role-of-women-at-rio20>.

Women and Environment, (2013, Feb. 16), retrieved on 5th March, 2013 from http://en.wikipedia.org/wiki/Women_and_the_environment

<http://dictionary.reference.com/>, retrieved on 5-01-2014.

<http://www.wisegeek.org>, retrieved on 5-01-2014.

www.merriam-webster.com/dictionary, retrieved on 5-01-2014.

The Milli Gazette, (2011, Nov. 1-15), 12(21), p. 1, New Delhi.

Earth Summit +5, (1997, June 23-27), retrieved on 5th March, 2013, from <http://www.un.org/ecosocdev/geninfo/sustdev/womensus.htm>.

APPENDIX - I

(পরিবেশ ব্যবস্থাপনা এবং নিয়ন্ত্রণে নারীর অংশ গ্রহণের অভীক্ষা)

Women Participation in Environmental Management Questionnaire

- নাম:
- বয়স: ১) ১৮-র নীচে ২) ১৮-২৫র মধ্যে ৩) ২৬-৪৫র মধ্যে ৪) ৪৫র উর্দে ।
- শিক্ষাগত যোগ্যতা: ১) নিরক্ষর ২) প্রাথমিক ৩) মাধ্যমিক ৪) স্নাতক ৫) স্নাতকোত্তর ৬) আরও বেশী।
- বাসস্থান: ১) গ্রাম ২) শহর।
- ঠিকানা:
- পেশা: ১) ছাত্রী ২) গৃহবধূ ৩) চাকুরীরতা ৪) নীতিনির্ধারিকা ৫) অবসরপ্রাপ্ত।
- সামাজিক অবস্থান: ১) বিবাহিত ২) অবিবাহিত।
- পারিবারিক মাসিক আয়: ১) ১০,০০০ এর বেশী ২) ৮০০০-১০,০০০ এর মধ্যে ৩) ৫০০০-৮০০০ এর মধ্যে।

তারিখ:

নির্দেশাবলী:

- ১। এই প্রশ্নগুচ্ছে আপনাদের গৃহ, পরিবার ও পরিবেশ সম্বন্ধে কিছু বিবৃতি দেওয়া হয়েছে।
- ২। প্রত্যেক বিবৃতির জন্য পাঁচটি করে উত্তর দেওয়া হয়েছে। উত্তরগুলি সবই ব্যক্তিগত। যে উত্তরটি আপনার কাছে গ্রহণীয় তার ডানদিকে টিক চিহ্ন দিন।
- ৩। এই বিবৃতিগুলি যত্নসহকারে পড়ে চিন্তা করে নিজেই উত্তর দিন।
- ৪। প্রয়োজনে বিবৃতিগুলির অর্থ আমার থেকে বুঝে নিন।
- ৫। অন্যের সঙ্গে পরামর্শ করে উত্তর দেবেন না।
- ৬। উত্তর দেবার জন্য আপনার কোনো ক্ষতি হবে না। আপনার জীবন, বিদ্যালয় বা পেশার সঙ্গে এই উত্তরের কোনো সম্পর্ক নেই।
- ৭। আপনার উত্তর গোপন থাকবে এবং কেবলমাত্র গবেষণার কাজে ব্যবহৃত হবে।

গবেষিকা
শিক্ষা তত্ত্ব বিভাগ
কল্যাণী বিশ্ববিদ্যালয়, কল্যাণী

		ক	খ	গ	ঘ	ঙ
		সম্পূর্ণ একমত	আংশিক একমত	জানি না	একমত নই	সম্পূর্ণ ভিন্নমত
১	আমাদের বেঁচে থাকার জন্য পরিবেশের প্রত্যেকটি উপাদান (গাছ, জল, মাটি, বাতাস ইত্যাদি) প্রত্যক্ষ বা পরোক্ষভাবে প্রয়োজনীয়।					
২	গাছপালার সংখ্যা বা পরিমাণ কমে গেলে আমাদের বেঁচে থাকা প্রায় অসম্ভব।					
৩	পরিবেশে গাছের সংখ্যা কমে গেলে বৃষ্টির পরিমাণ কমে যাবে।					
৪	বাড়ির প্রয়োজনে গাছ কাটতে হলে আপনি নতুন স্থানে নতুন গাছ লাগাবেন।					
৫	পুকুরের জলে জামাকাপড় কাচলে বা গরুবাছুর স্নান করলে পুকুরের জলের কোনো ক্ষতি হয় না।					
৬	চাষের সময় গোবর সার প্রয়োগ করলে মাটি দূষিত হবে না কিন্তু মাটির উর্বরতা বাড়বে।					
৭	প্রাকৃতিক শোভাযুক্ত স্থানে বা অভয়ারণ্যে বেড়াতে গেলে সেখানকার নিয়ম মানা অবশ্য কর্তব্য।					
৮	বাড়ির পাশে পরিচ্ছন্ন পুকুর থাকলে ভালো করে স্নান করা যায়।					
৯	বাড়ির আবর্জনা আপনি আপনার বাড়ির পাশের রাস্তা বা পুকুরে ফেলে দেন।					
১০	সাধারণ জল সবসময় বিশুদ্ধ করে পান করা উচিত।					
১১	পরিবেশকে সুস্থ, সুন্দরভাবে সাজিয়ে রাখতে হলে নতুন নতুন ইটের বাড়ি তৈরী করতে হবে।					
১২	বাড়ির কোনো গাছ মরে গেলে আমাদের কিছুই করার নেই।					
১৩	বাড়িতে সবজী, ফল রাখবার জন্য আপনি বাঁশ বা বেতের বুড়ি পছন্দ করেন।					
১৪	মেঝেতে বসবার বা শোবার জন্য আপনি প্লাস্টিকের মাদুর ব্যবহার করেন।					
১৫	বাড়িতে কোনো অনুষ্ঠান হলে আপনি থার্মোকলের থালা ব্যবহার করেন।					
১৬	বাজার করবার জন্য আপনি প্লাস্টিকের ব্যাগ ভীষণ পছন্দ করেন।					

	ক	খ	গ	ঘ	ঙ
১৭	রান্নার জ্বালানি হিসাবে গোবর ঝুটে, কয়লা, কাঠের চাইতে গ্যাসের ব্যবহার করলে পরিবেশ কম দূষিত হয়।				
১৮	আপনার বাড়ির ফাঁকা জায়গায় আপনি ফুলের গাছ বা সবজি লাগাতে ভালোবাসেন।				
১৯	আপনার কর্মজ্বলের ফাঁকা জায়গায় আপনি ফুলের গাছ বা সবজি লাগাতে ভালোবাসেন।				
২০	আপনার বাড়ির প্রত্যেক সদস্য আপনার সবজি বা ফুলের বাগানের যত্ন করতে পছন্দ করেন।				
২১	মাটির বাসনপত্র রান্নার জন্য ব্যবহার করা প্রায় অসম্ভব।				
২২	উপহারের বাঁধা কাগজ যত্ন করে রাখার চাইতে ফেলে দেওয়াই ভালো।				
২৩	প্লাস্টিকের ব্যাগ, প্যাকেট বন্ধ হলেই ভালো।				
২৪	বাড়ির শাকসবজির খোসা, নোংরা আবর্জনা যেখানে সেখানে ফেলে দিলে কিছুই হয় না।				
২৫	আপনার বাড়িতে গৃহপালিত পশু আছে।				
২৬	আপনার বাড়িতে গৃহপালিত পশুদের রোগ হলে আপনি তাদের বিক্রি করে দেন।				
২৭	রান্নার জ্বালানী কাঠ আশেপাশের গাছপালা থেকে কুড়িয়ে বা কেটে আনতে পারলে ভালো।				
২৮	খুতু যেখানে সেখানে ফেললে কোনো ক্ষতি নেই।				
২৯	বাড়ির প্রয়োজনীয় খাবার, বাসনপত্র, জামাকাপড় ইত্যাদি গৃহস্থালী জিনিস কেনাকাটায় আপনার মতামতের কোনো গুরুত্ব নেই।				
৩০	একজন মহিলার সন্তানসংখ্যা মহিলা নিজেই ঠিক করবেন।				
৩১	পরিবারে পুরুষ ও মহিলা উভয়ই অর্থনৈতিক দিকটি সুন্দরভাবে পরিচালনা করতে সক্ষম।				
৩২	আপনি আপনার পরিবারের সদস্যদের সঙ্গে মুক্ত ও স্বাধীনভাবে মত বিনিময় করতে পারেন।				
৩৩	পরিবারের কোনো সদস্যদের অসুখ হলে আপনি সাধারণত নিজেই চিকিৎসকের পরামর্শ ছাড়া দোকান থেকে ঔষধ কিনে নেন।				

		ক	খ	গ	ঘ	ঙ
৩৪	স্বাস্থ্যরক্ষায় শিশুদের টীকাকরণের কোনো গুরুত্ব নেই।					
৩৬	মলমূত্র ত্যাগ যত্রতত্র করলে কিছুই হয় না।					
৩৭	দৈনিক খাদ্যতালিকায় যে কোনো একটি মরসুমি ফল আপনি রাখতে পছন্দ করেন।					
৩৮	খাবার আগে হাত ধোবার কোনো প্রয়োজন নেই।					
৩৯	পুকুরের জল রান্নার জন্য ব্যবহার করা যেতেই পারে।					
৪০	সকাল বেলায় চেয়ে রাতে শোবার সময় দাঁত মাজা বেশী দরকার।					
৪১	মাটির বা পিতলের কলসীর চাইতে প্লাস্টিকের বালতি বা বোতলে পানীয় জল ভালো থাকে।					
৪২	শিশুর জীবন গঠনের প্রাথমিক খাদ্য মায়ের দুধ।					
৪৩	বাড়ির চাইতে হাসপাতালে শিশুপ্রসবের ব্যবস্থা করানো উচিত।					
৪৪	ম্লানের এবং জামাকাপড় ধোবার সময় যতখুশি জল ব্যবহার করা যেতে পারে।					
৪৫	রাষ্ট্রায় জলের কল থেকে জল পড়ে নষ্ট হলে কিছুই করবার নেই।					
৪৬	আপনার বাড়ির চারপাশে গাছের সংখ্যা গত দশ বছরের তুলনায় অনেক কমেছে।					
৪৭	বাজার করবার সময় প্লাস্টিকের ব্যাগের কোনো বিকল্প নেই।					
৪৮	সবুজ শাক সবজিতে ভিটামিন বেশী থাকে।					
৪৯	শিক্ষা শুধু চাকরীর সুযোগ তৈরী করে তাই নয়, আমাদের চারপাশের পরিবেশও সুন্দর রাখতে শেখায়।					
৫০	স্বাভাবিক হতে সবার আগে প্রয়োজন নিজের ওপর ভরসা করা।					

APPENDIX - II

WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT

QUESTIONNAIRE

Name:

Age: 1. under 18 2. Within 18 – 25 3. Within 26 – 45 4. Above 45

Educational qualification: 1. Illiterate 2. Primary 3. Secondary 4. Graduate 5. Post-Graduate
6. More

Residence: 1. Rural 2. Urban

Address:

Occupation: 1. Student 2. Housewife 3. Servicewomen 4. Administrative person 5. Aged
6. Retired

Type of occupation:

No. of members in family:

Social status: married / unmarried

Monthly income of family: 1. More than 10000 2. Within 8000 - 10000
3. Within 5000 - 8000

Date:

Guidelines:

1. There are some statements regarding your home, family, and environment.
2. There are five answers for each statement. Answers are strictly personal. Please tick the correct option.
3. Read the statements carefully and answer yourself.
4. Ask me for clarification if necessary.
5. Please do not answer by discussion with others.
6. No harm will be done to you. The answers are not related to your life and profession.
7. Your answers will be confidential and will only be used for research purpose.

Researcher
Dept. of Education
University of Kalyani
Kalyani, Nadia

	Strongly Agree	Agree	Unknown	Disagree	Strongly Disagree
1. The natural elements (tree, water, soil, air, etc.) are necessary for our living directly or indirectly.					
2. If the numbers of trees are reduced, it is difficult for us to live.					
3. The amount of rainfall will lessen if the numbers of trees are reduced.					
4. You will plant new trees, if you are compelled to cut old ones.					
5. There is no harm in washing clothes in pond.					
6. The use of bio-fertilizer in cultivation does not pollute but enhances fertility.					
7. If we visit any natural place or sanctuary, we should abide by the rules.					
8. We can bathe well if there is a clean pond beside our house.					
9. You dispose the garbage of your house in adjacent road or pond.					
10. We should drink purified water.					
11. New houses made of bricks are essential to decorate the environment.					
12. We have nothing to do if a tree dies.					
13. You use bamboo or cane basket to keep fruits.					
14. You use plastic mat to sleep on floor.					
15. You use fashionable thermocol dishes in household occasion.					
16. You like plastic bags for shopping.					
17. To use gas instead of bio-fuel as coal, wood comparatively pollute nature less.					

	Strongly Agree	Agree	Unknown	Disagree	Strongly Disagree
18. You like to plant flowers and fruit trees in vacant places of house.					
19. You like to plant flowers and fruit trees in vacant places of your workplace.					
20. Each member of our family takes care of your gardening of flowers as well as vegetables.					
21. Cooking is impossible without earthen pots.					
22. The presentation papers should be disposed than to preserve.					
23. Plastic bags should be banned.					
24. We can dump garbage anywhere.					
25. You have domestic animals.					
26. If the domestic animals are affected by diseases, they should be sold.					
27. Cooking fuels may be collected from trees from surroundings.					
28. There is no problem in spitting anywhere.					
29. Your opinion has no value regarding the purchase of household products like food, utensils, dresses etc.					
30. A woman will decide herself the number of children.					
31. Both the male and female member can manage the economic sector of the family.					
32. You express your opinion freely regarding family matters.					
33. When anyone in the family is ill, you bring medicine from shop without consulting doctors.					
34. Vaccination is of no value to protect child's health.					

	Strongly Agree	Agree	Unknown	Disagree	Strongly Disagree
35. Aids is transmitted by touch.					
36. We do not need any proper place for sanitation.					
37. You like a seasonal fruit daily in your diet.					
38. We do not need to wash hands before eating.					
39. To use the water of pond for cooking is good for health.					
40. It is essential to brush our teeth at night than morning.					
41. Drinking water should be stored well in plastic bottles rather than earthen pots.					
42. Breast milk is primary food for building a child's health.					
43. It is better to make the arrangement of delivering of a pregnant mother to hospital than houses.					
44. Use excess of water during bathing or washing clothes is essential.					
45. We can do nothing wastage of water from tap.					
46. The number of trees is reduced in last ten years.					
47. There is no substitute for plastic bags.					
48. Green vegetables contain more vitamins.					
49. Education not only creates scope for employment but also teaches how to keep environment clean.					
50. The first step to be independent is to respect oneself.					

APPENDIX – III

Women Participation in Environmental Management Scores (Unclassified Data)

Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
77	77	29	117	102
81	71	24	81	107
86	67	26	79	94
67	56	24	80	81
70	74	17	65	88
81	74	23	74	90
84	80	23	74	100
82	70	26	82	94
81	67	24	81	99
86	72	24	78	96
84	85	29	83	101
79	79	28	79	99
79	74	29	89	95
72	72	26	84	90
80	72	28	84	92
81	73	30	95	108
74	75	29	85	99
60	64	20	62	69
57	56	20	58	69
82	74	26	80	91
83	76	30	95	109
81	76	28	86	105
78	70	25	86	99
80	72	24	86	96
69	68	26	78	93
76	67	29	89	90
84	79	22	86	107
79	75	30	83	91
80	78	29	81	92
79	76	28	88	85
75	73	27	80	97
64	67	21	64	83

70	67	20	72	73
71	73	29	80	97
66	55	24	61	61
76	73	27	80	97
66	66	24	65	74
66	66	24	69	74
66	66	24	67	74
81	72	30	86	94
83	76	30	94	91
94	85	30	94	108
67	61	23	77	68
77	73	29	80	97
71	62	26	74	87
66	55	24	61	63
67	68	28	81	63
69	64	28	73	60
77	61	26	72	64
71	74	28	77	67
72	67	29	84	71
71	57	28	77	69
75	68	26	82	67
73	71	28	84	79
66	54	26	76	59
73	65	26	75	62
58	56	26	68	49
60	58	25	69	46
76	67	27	82	69
78	65	29	81	83
67	57	25	72	70
65	53	29	80	57
71	62	29	81	61
76	68	27	85	71
74	61	28	73	57
74	58	27	78	57
65	54	25	71	48
67	61	25	75	56

80	74	26	83	90
65	61	22	67	59
77	72	24	70	81
69	66	28	72	59
64	68	27	77	66
76	67	29	77	72
68	61	27	71	55
81	64	27	80	65
68	57	29	69	67
63	57	29	86	54
75	64	27	76	65
71	51	29	78	59
67	62	26	78	62
61	60	29	82	59
68	56	28	74	60
70	60	28	80	70
60	56	26	77	64
69	58	26	79	66
75	65	26	71	73
71	61	28	77	69
76	60	29	71	66
77	67	29	73	79
69	54	25	64	55
81	67	28	73	75
74	65	27	79	74
82	75	29	71	73
76	64	29	70	79
80	67	28	77	78
80	55	29	72	57
69	63	28	73	65
75	57	29	76	69
84	70	27	81	71
59	60	19	65	69
61	61	21	69	70
59	60	21	68	68
77	70	29	82	92

79	68	29	90	96
77	66	29	86	95
77	69	29	90	96
77	69	29	80	96
77	65	29	82	96
77	67	29	82	96
59	60	21	66	72
80	83	28	78	106
72	80	25	83	90
63	61	21	72	64
58	60	21	72	69
59	61	21	72	68
59	58	19	66	69
58	58	22	64	67
62	63	20	72	71
58	60	19	66	68
58	60	21	70	69
59	61	22	66	68
59	60	23	70	69
59	61	20	72	68
59	61	21	72	68
61	62	21	69	71
77	67	29	82	96
82	66	29	82	92
77	66	29	80	96
59	62	25	72	76
72	78	24	77	84
73	71	24	66	88
67	64	26	77	80
69	69	25	73	92
63	63	28	83	78
70	70	28	81	72
76	72	26	84	97
77	67	29	82	96
77	67	29	82	96
80	83	28	78	106

66	80	27	81	91
77	67	29	83	92
77	69	29	82	96
73	73	26	79	92
70	76	25	78	93
77	66	29	80	95
81	66	29	80	100
81	77	24	85	94
82	81	29	83	92
83	96	26	91	101
84	88	26	82	101
66	69	21	77	75
61	62	21	63	74
59	57	21	66	65
62	63	21	64	74
59	60	20	68	68
78	70	28	80	93
78	64	26	84	93
78	70	28	81	93
78	70	46	84	93
79	53	28	82	85
70	67	21	83	72
72	81	29	87	93
77	57	29	82	86
77	67	29	82	86
59	60	20	72	67
59	61	20	68	68
75	70	30	80	81
75	74	30	77	89
75	74	30	77	89
75	74	30	74	89
74	73	30	82	90
80	81	25	85	87
72	68	27	80	83
65	71	26	82	81
76	81	28	79	92

87	56	29	85	77
65	66	27	79	79
68	71	27	78	83
85	80	26	84	91
66	67	29	79	80
69	72	26	83	83
81	78	25	85	70
80	83	25	86	91
85	82	25	86	91
74	78	29	80	86
61	68	17	61	68
61	71	17	61	68
75	80	29	85	90
71	68	30	76	79
82	82	25	87	86
70	70	25	78	81
69	67	24	77	78
67	89	23	81	78
70	70	29	77	75
73	68	24	78	84
69	68	29	79	76
80	63	26	82	84
61	68	19	61	70
62	65	18	53	64
59	65	18	56	73
65	68	24	82	86
65	68	24	82	86
65	67	24	82	85
84	80	25	85	89
82	84	26	86	97
85	85	25	86	97
71	72	27	82	83
74	74	26	81	86
87	80	28	88	95
87	83	22	80	92
84	102	26	82	82

56	57	18	60	64
50	59	26	72	82
61	68	17	61	68
75	74	30	80	89
75	74	30	80	87
85	78	25	85	92
74	76	27	80	85
88	80	23	81	89
90	87	21	89	100
86	81	26	82	89
80	80	25	81	90
80	76	26	79	85
73	72	26	81	81
66	68	26	79	75
76	72	30	81	84
71	69	30	79	75
71	69	26	81	82
65	68	24	81	86
65	68	24	75	82
71	72	26	80	91
75	74	30	77	87
71	72	28	83	81
57	68	29	83	76
72	72	26	82	85
75	76	28	83	85
70	64	29	83	74
72	69	26	81	82
68	67	27	79	73
74	82	25	84	92
69	69	26	81	79
70	71	26	81	80
74	85	25	84	90
73	75	29	81	86
72	72	26	83	85
82	83	27	89	101
78	75	27	84	93

78	70	28	84	89
78	68	28	84	93
79	70	28	79	89
81	78	27	82	95
78	71	28	80	93
75	60	26	76	65
80	66	27	73	79
69	51	29	61	61
77	67	28	81	89
69	62	26	71	63
69	67	27	71	68
55	59	23	75	64
71	69	28	81	74
68	61	26	80	60
78	68	29	81	87
79	67	29	76	71
60	58	27	74	56
74	67	29	85	97
80	69	29	78	99
76	60	24	74	90
77	66	29	82	79
73	65	20	79	77
79	68	29	80	96
68	62	27	76	56
74	68	28	74	94
71	67	29	80	79
69	67	28	74	71
84	65	29	71	74
68	66	27	82	82
72	64	27	80	63
79	80	27	89	99
83	81	26	83	96
83	86	23	73	101
77	73	26	88	102
78	58	29	82	86
79	75	29	88	102

74	68	28	88	94
78	69	26	79	98
78	71	28	86	101
75	73	27	83	94
74	74	29	92	109
87	75	26	91	113
73	61	29	89	94
84	80	24	87	109
86	69	27	93	84
78	75	29	91	95
81	69	30	87	97
77	82	29	80	99
77	65	27	85	89
85	82	29	96	112
80	80	29	92	101
87	87	30	79	109
86	77	28	92	103
81	77	26	84	92
84	86	29	96	111
79	71	23	85	91
83	82	28	82	104
69	74	30	88	85
87	81	26	93	107
81	75	30	92	103

APPENDIX – IV

Women Participation in Environmental Management Scores According to Rural Group (Classified Data)

Rural Student age upto 25				
Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
77	77	29	117	102
69	68	26	78	93
67	68	28	81	63
77	61	26	72	64
71	74	28	77	67
75	68	26	82	67
60	58	25	69	46
65	53	29	80	57
74	58	27	78	57
63	57	29	86	54
75	64	27	76	65
71	51	29	78	59
68	56	28	74	60
70	60	28	80	70
60	56	26	77	64
77	67	29	73	79
76	64	29	70	79
80	67	28	77	78
77	69	29	90	96
77	69	29	80	96
77	65	29	82	96

77	67	29	82	96
80	83	28	78	106
82	66	29	82	92
69	69	25	73	92
76	72	26	84	97

Rural Housewife age upto 25				
86	67	26	79	94
80	72	24	86	96
66	66	24	69	74
94	85	30	94	108
58	56	26	68	49
71	62	29	81	61
65	54	25	71	48
69	66	28	72	59
64	68	27	77	66
76	67	29	77	72
69	54	25	64	55
59	60	19	65	69
61	61	21	69	70
59	60	21	68	68
77	70	29	82	92
77	66	29	86	95
59	60	21	66	72

72	80	25	83	90
63	61	21	72	64
58	60	21	72	69
59	61	21	72	68
59	58	19	66	69
58	58	22	64	67
62	63	20	72	71
58	60	19	66	68

Rural Policy maker & Service holder age upto 25				
81	74	23	74	90
86	72	24	78	96
79	75	30	83	91
64	67	21	64	83
71	73	29	80	97
66	55	24	61	61
66	66	24	67	74
81	72	30	86	94
77	73	29	80	97
77	67	29	82	96
77	66	29	80	96
59	62	25	72	76
72	78	24	77	84
73	71	24	66	88

67	64	26	77	80
58	60	21	70	69
59	61	22	66	68
59	60	23	70	69
59	61	20	72	68
61	62	21	69	71
77	67	29	82	96
77	67	29	82	96
80	83	28	78	106
63	63	28	83	78
70	70	28	81	72

Rural Student age above 25				
81	76	28	86	105
81	67	28	73	75
78	64	26	84	93
78	58	29	82	86
78	69	26	79	98
87	75	26	91	113
84	80	24	87	109
73	73	26	79	92
77	66	29	80	95
81	66	29	80	100
81	77	24	85	94
78	70	28	80	93

79	53	28	82	85
77	67	29	82	86
84	88	26	82	101
66	69	21	77	75
61	62	21	63	74
59	57	21	66	65
62	63	21	64	74
59	60	20	68	68
70	67	21	83	72
72	81	29	87	93
77	57	29	82	86
59	60	20	72	67
59	61	20	68	68

Rural Housewives age above 25				
81	71	24	81	107
74	75	29	85	99
80	63	26	82	84
84	102	26	82	82
85	78	25	85	92
88	80	23	81	89
78	75	27	84	93
79	70	28	79	89
81	78	27	82	95

75	60	26	76	65
69	51	29	61	61
69	62	26	71	63
55	59	23	75	64
71	69	28	81	74
68	61	26	80	60
60	58	27	74	56
74	67	29	85	97
77	66	29	82	79
68	62	27	76	56
69	67	28	74	71
84	65	29	71	74
68	66	27	82	82
72	64	27	80	63
79	80	27	89	99
83	81	26	83	96

Rural Policy Makers & Service Holder age above 25				
70	74	17	65	88
60	64	20	62	69
57	56	20	58	69
82	74	26	80	91
75	57	29	76	69
82	83	27	89	101

78	71	28	80	93
80	66	27	73	79
77	67	28	81	89
69	67	27	71	68
78	68	29	81	87
79	67	29	76	71
80	69	29	78	99
76	60	24	74	90
73	65	20	79	77
79	68	29	80	96
74	68	28	74	94
71	67	29	80	79
77	69	29	82	96
83	96	26	91	101
83	86	23	73	101
66	80	27	81	91
77	67	29	83	92
70	76	25	78	93
82	81	29	83	92

APPENDIX – V

Women Participation in Environmental Management Scores According to Urban Group (Classified Data)

Urban Student age upto 25				
84	80	23	74	100
81	67	24	81	99
83	76	30	94	91
67	61	23	77	68
72	67	29	84	71
71	57	28	77	69
73	71	28	84	79
66	54	26	76	59
73	65	26	75	62
76	67	27	82	69
67	57	25	72	70
74	61	28	73	57
80	74	26	83	90
66	55	24	61	63
77	72	24	70	81
68	57	29	69	67
67	62	26	78	62
61	60	29	82	59
75	65	26	71	73
71	61	28	77	69
76	60	29	71	66

74	65	27	79	74
82	75	29	71	73
65	67	24	82	85
75	74	30	80	87
78	75	29	91	95

Urban Housewife age upto 25				
67	56	24	80	81
78	70	25	86	99
70	67	20	72	73
66	66	24	65	74
71	62	26	74	87
69	64	28	73	60
78	65	29	81	83
76	68	27	85	71
67	61	25	75	56
65	61	22	67	59
68	61	27	71	55
69	58	26	79	66
74	74	29	92	109
80	80	29	92	101
81	75	30	92	103
74	85	25	84	90
73	75	29	81	86

72	72	26	83	85
75	74	30	77	87
80	83	25	86	91
59	61	21	72	68
78	70	28	81	93
78	70	46	84	93
75	70	30	80	81
87	87	30	79	109

Urban Policy maker & Service holder age upto 25				
82	70	26	82	94
84	85	29	83	101
76	67	29	89	90
84	79	22	86	107
75	73	27	80	97
76	73	27	80	97
66	55	24	61	63
87	81	26	93	107
81	77	26	84	92
84	86	29	96	111
86	77	28	92	103
79	68	29	90	96
81	73	30	95	108
78	70	28	84	89

78	68	28	84	93
77	73	26	88	102
79	75	29	88	102
74	68	28	88	94
78	71	28	86	101
75	73	27	83	94
73	61	29	89	94
86	69	27	93	84
81	69	30	87	97
77	65	27	85	89
85	82	29	96	112

Urban Student age above 25				
72	72	26	84	90
68	71	27	78	83
71	72	26	80	91
71	72	28	83	81
57	68	29	83	76
72	72	26	82	85
75	76	28	83	85
70	64	29	83	74
72	69	26	81	82
68	67	27	79	73
74	82	25	84	92
69	69	26	81	79

70	71	26	81	80
79	71	23	85	91
83	82	28	82	104
69	74	30	88	85
86	81	26	82	89
59	65	18	56	73
84	80	25	85	89
82	84	26	86	97
71	72	27	82	83
74	74	26	81	86
56	57	18	60	64
61	68	17	61	68
75	74	30	80	89
74	76	27	80	85
90	87	21	89	100

Urban Housewives age above 25				
79	79	28	79	99
79	74	29	89	95
69	63	28	73	65
75	74	30	77	89
75	74	30	77	89
75	74	30	74	89
72	68	27	80	83

65	71	26	82	81
87	56	29	85	77
65	66	27	79	79
85	80	26	84	91
66	67	29	79	80
69	72	26	83	83
81	78	25	85	70
61	71	17	61	68
75	80	29	85	90
71	68	30	76	79
82	82	25	87	86
69	67	24	77	78
67	89	23	81	78
70	70	29	77	75
73	68	24	78	84
69	68	29	79	76
61	68	19	61	70
62	65	18	53	64
80	80	25	81	90
73	72	26	81	81

Urban Policy Makers & Service Holder age above 25				
80	72	28	84	92
83	76	30	95	109

80	78	29	81	92
79	76	28	88	85
80	55	29	72	57
83	96	26	91	101
74	73	30	82	90
80	81	25	85	87
76	81	28	79	92
85	82	25	86	91
74	78	29	80	86
61	68	17	61	68
70	70	25	78	81
65	68	24	82	86
65	68	24	82	86
85	85	25	86	97
87	80	28	88	95
87	83	22	80	92
50	59	26	72	82
80	76	26	79	85
76	72	30	81	84
65	68	24	81	86
66	68	26	79	75
71	69	30	79	75
71	69	26	81	82
65	68	24	75	82

1. Introduction

1.1 Origin of the Research Problem

Environmentalism in recent years has become a dominant discourse. The various fields of this discipline collectively promote a number of issues regarding environment and development. Developments require an understanding and control over human relationship with nature, otherwise known as environmental management. Such management becomes meaningful only when women contribute and are allowed to contribute their full participation in the field. Development has fortunately given way to sustainable development, and growth has given way to 'green growth'. In India, as elsewhere, social science research has been closely linked to the rise and maturity of the environmental movement. After the Independence, there began an age of ecological innocence, when the urge to industrialise and 'catch up' with the developed world relegated environmental concern to the background. Now-a-days, the concern for maintaining ecological balance emerged in the form of vocal and articulate social movement.

Governments the world over are now speculating the global dimension of a number of environmental problems, such as climate change, ozone depletion, dumping of hazardous wastes, destruction of biological resources and of forests' environmental management programmes.

The situation has become bad to worse. Now it is high time for taking appropriate measures to solve environmental problems. A lot of studies on women and environment have shown that women are significant actors in natural resource management and they are also major contributors to environment rehabilitation and

conservation. Women's direct contact with the environment has produced their deep knowledge about the environment.

Women through their roles as farmers and as collectors of water and firewood have a close connection with their local environment. They often suffer most directly from environmental problems. Thus women have served as agriculturists, water-resource-managers, responsible domestic and household managers, health planners, forest managers etc.

So, involving women in protecting the environment would help societies to develop a sense of responsibility. And it is needed to maintain a good balance between human and nature and natural resources. Women view environment as the life support systems of humanity. It is the source of all life, that people are dependent on the environment. Without good environment our life would not be peaceful and healthy. Women's commitment and dedication to work is a manifestation of their selfless love and concern for the environment; for their children and for the future generation.

In the era of globalisation, industrialisation and e-communication and rapid changing scenario, India has emerged as the most intricate and one of the largest democratic country in all over the world. This is true, especially, in today's context, where the world is a global village, where territorial boundaries are in a state of constant flux, where new challenges and new connections are waiting to be discovered. Men and women have done both whatever good in this universe. Over the past few decades women have contributed significantly to life and society by interrogating and exploring their own lives and that of other women. Today's Indian

women deal with multiple issues concerning self and society. Women had for long been denied access to education, equal rights, right to work and the freedom to choose.

But in our societies the role of women outside the family has never been accepted in the same manner as it is in case of male. Before two decades, barring a handful of exceptions the Indian women were not ready to penetrate and participate meaningfully in any socio-political decision making mechanism. Moreover the rigorous traditional values also confine women within the frontiers of family. Consequently, women are constrained to take the task of their distinctiveness in Society. Findings of several studies in women indicate that a vast majority of, if not most of them are not properly aware of their role and right in the society and they prefer to remain at the periphery of the socio-political power. The United Nations after declaring 1975-1985 as the decade for women's development observed that women performed two third of world's work but receive only ten percent of the world's income and only one percent of the means of production. Both inside and outside the households women are excluded from positions of power. They are denied opportunities to participate in the decision making process. Women's education and participation thus are essentially vital issues to rectify this imbalance and gender inequity. Active participation in social economic and political sphere would help in enhancing the process of environmental management.

The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The constitution not only grants equality to women but also empowers the state to adopt measures of positive discrimination in favour of women.

Within the framework of a democratic polity, our laws, development policies, plans and programs have aimed at women's advancement in different spheres. From the Fifth Five year plan (1974-78) onwards has been a marked shift in the approach to women's issues from welfare to development. In the recent years, the development of women has been recognised as the central issue in determining the status of women. The National Commission for Women was set up by an act of Parliament in 1990 to safeguard the rights and legal entitlements of women. The 73rd and 74th Amendments (1993) to the Constitution of India have provided for reservation of seats in the local bodies of Panchayats and Municipalities for women laying a strong foundation for their participation in decision making at the local levels.

According to the Constitution of India, all people are source of sovereign power, laws and authority. They are expected to share in power. Sharing in power and decision making by the people is the essence of real democracy. All sections of the people are unable to exercise influence the course of the making of law, administration of authority, or distribution of the national cake. It may be either due to poverty or social stratification or physical coercion yielded by powerful sections of Indian Society. Democracy has no meaning for them, when a part of people is made to suffer from social discrepancies. Since Independence the Indian Government has been devoting their special attention to uplift the especially weaker sections of the Indian Society and, therefore, through planned action a number of welfare schemes and programmes have been adopted for betterment of women. After independence Government as well as voluntary organisations are right in paying special attention to education as a key factor for social, economic, political and

environmental change for of women. Like many other countries of the world, India adopted western model of democracy without having socio-economic and cultural conditions conducive to its growth and working, India has declared her goals of polity in the preamble of her constitution: Justice, Equality, Liberty, and Fraternity.

More than 70% of the Indian population is rural based (Akwa, L., 2009). Biomass plays a crucial role in meeting daily survival needs of the vast majority of rural households. Water is essential for survival and its availability is related to biomass. The biomass based subsistence economy is mostly non-magnetised. Production and processing of bio-mass as raw materials, are also the biggest sources of employment. Development imperatives have inevitably led to some destruction of the biomass through deforestation and environmental degradation.

India has been agrarian country. Women constitute about 60% of the agricultural work force (Akwa, L., 2009). About 48% self employed farmers are women and 64% of the informal sector work force depending on agriculture is women (Akwa, L., 2009). The plight of most rural women has been pathetic since they have to collect firewood, fetch drinking water, search fodder to feed cattle, work on their meagre land to raise crops, works as labour on other farms, take care of children. According to World Bank study (Akwa, L., 2009), lack of toilets and other proper sanitation facilities cost India nearly \$54 billion a year through hygiene-related illness, lost productivity and other factors steaming from poor sanitation facilities. As far as scenario of rural sanitation is concerned, the access to water supply and sanitation services is still largely inadequate. In various studies it is indicated that is absence of a sanitary latrine at home, it is the women's dignity which is found to be stake especially in rural India. To ensure the success and

sustainability of any sanitation programme women must be given enough space and opportunity to take active part in it. Women have always been a better manager in comparison to their male counterpart in the context promoting the state of household level sanitation.

Traditionally, women have been responsible for subsistence and survival for water, food, fuel, fodder and habitat, though they rarely get the credit for nurturing these life support systems, added to this environmental destruction, accelerates women's problems in a way very difficult from that of men. The challenge is to re-establish the symbiosis between communities, women and natural resources and reverse the trend of negative impact of existing developmental paradigms.

Environment is composed of material and non-material entities. Under the non-material entities there come social and environmental norms, individual and social freedom, value system, ethical and humanity aspects, human relations, attitude towards life, society, nature, environment, etc. Human being rules society, nature and environment; but their ideology guides them in all thoughts and actions. The mental environment guides the physical environment surrounding us. So, it is the right type of ideology, which is responsible for the expected type of environment. Environmental sustainability means to meet the environmental needs of the present without compromising the needs of future. This attitude needs to be inculcated among the learner i.e. the members of the society as well as environment. Woman (mother) is the first teacher to every child. God has bestowed them with some special type of child nurture qualities, such as softness, loveliness, affection, humanity, compassion, empathy, etc. They only can compensate the defects in child's education

system and help in inculcating right type of attitude and ideology among their children from the very beginning of their life. Hence, mothers need to devote more time with their children – so that attitude and ideology, congenial for environmental sustainability is inculcated among all and a better living environment has become a reality in future.

The UN Report on women observes that the women are weighed down with responsibility, while the ‘men’ rides high with power. It is a general notion of all societies that women must do all domestic work, and men should earn wages for families. As a result, until today, maximum share of the world’s wealth is on men’s side, while most of the work is on women’s side. If we go through the reports of employment, we can find that the participation of women is inadequate in the field of employment and that women’s earning is less than half of the earning of men.

The advancement of women through the participation in socio-politics began to assume importance only in the twentyfirst century. The global concern for women’s participation was noticed in 1975 when the United Nations declared the decade as the ‘women Development Decade’ and adopted some resolutions for it. This was followed by the Nairobi Conference (1985) which called on the participating countries to take steps for ensuring women’s participation in politics through reservation of the 35 percent seats in elections. In the developing countries women continue to face a variety of cultural, institutional, religious and legal constraints that circumscribe their involvement in their respective societies and limit their advancement and participation in social and environmental activities.

It is very important to note that the progress of women advancement through Panchayets would largely depend on the breaking of the hegemony of rural rich over villagers, or, so to say, of feudalism. This is a challenge to women. Women advancement through Panchayet requires to be supported by a sustained campaign and vigorous efforts for creating awareness about rights and duties of women. It can not be achieved until and unless centre percent literacy of women is assured.

Education, obviously a powerful vehicle for bringing about changes a panacea of all evils and potent weapons for prevention plays a central role in the society. The role of the education in traditional societies was largely confined to cultural accomplishment. In the content of development of modern science and technology, which are being used as tools of qualitative change in human lives, education has come to be acknowledged as a tool to human development and advancement.

In the context of transformation of a traditional society into a global era, the centre of authority shifts from the known information system to well to do habits, which are supposedly based on the principles of equity and justice. Education in the real sense can enhance all those capacities of women in the district, namely Nadia. Keeping the above discussion in the view the study has been conducted on the participation of women in environmental management in the district, Nadia.

1.2 Related Terms Defined

1.2.1 Environmental Management

According to Leopold Aldo (1949) “Environmental Management is the practice of creating the harmony between the living and non-living components – all the components of nature”.

Karpoff, Jonathan M. (1993) has defined “Environmental Management is as a strategy to balance growth with environmental protection, reducing pollution, waste, consumption of natural resources”.

Environmental Management is an attempt to control human impact on and interaction with the environment in order to preserve natural resources.

Environmental Management is a purposeful activity with the goal to maintain and improve the state of an environmental resource affected by human activities (<http://dictionary.reference.com/>).

Environmental Management can be defined as “the management of the interaction and impact of human activities on the natural environment”. (<http://westcoastdm.co.za/about/environmental-management/>)

1.2.2 Environmental Awareness

The word awareness acquires different meanings in different socio-cultural and political contexts. The concept of self-strength, control, self-power, self-reliance, own choice, life of dignity in accordance with ones values, independence, own decision making, awakening, capability are embedded in the generalized idea of awareness. Awareness is of intrinsic value but it also has instrumental value. In the broadest sense awareness is the expansion of freedom of choice and action. It means

increasing ones authority and control over the resources and decisions that affect ones life.

Environmental awareness is an awareness and subsequent desire to preserve natural resources and the environment. the preservation of the environment and a responsible attitude in the use of natural resources are decisive factors that allow humans to coexist with nature and biodiversity.

(<http://www.neyahotels.com/en/consciencia-ambiental.html>)

1.2.3 Eco-Friendliness

Eco-friendly literally means earth-friendly or not harmful to the environment . This term most commonly refers to products that contribute to green living or practices that help conserve resources like water and energy (<http://homeguides.sfgate.com/ecofriendly-mean-78718.html>).

The term is used only to highlight the fact that women should be involved and their perspectives must be reflected in the policies and programmes for environment, conservation and restoration. Considering the impact of environmental factors on their livelihood, women's participation must be ensured in the conservation of the environment and control of environmental degradation.

1.2.4 Animal Husbandry

According to the American Heritage Science Dictionary (2002), "Animal Husbandry is the branch of agriculture concerned with the care and breeding of domestic animals such as cattle, dogs, sheep, and horses".

Animal husbandry is the science of looking after and breeding animals — specifically those that are used in agriculture, to provide products, for research

purposes or as domestic pets. The subject covers a wide range of activities, including care and grooming, livestock farming, accommodation and hygiene. The study also overlaps with many other disciplines, such as agriculture, veterinary science and genetics. Not all people involved in husbandry will necessarily take part in all these activities or require knowledge of other disciplines. In many parts of the world, people are essentially practising animal husbandry though being farmers, ranchers, sheepherders, or simply taking care of large groups of livestock. (<http://www.wisegeek.com/what-is-animal-husbandry.htm>)

The term is associated with the on-farm conservation tradition of rural and tribal women with reference to agro-biodiversity. Traditionally, women have dealt the non-monetized bio-mass based subsistence economy of the household i.e. firewood, cow dung, crop-wastes, organic manure, fodder etc.

1.2.5 Sanitation Practices

The World Health Organization (2009) states that:

"Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and feces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal."

("Sanitation". *Health topics*. World Health Organization.)

Special attention are to be given to the needs of women in the provision of safe drinking water, sewage disposal, toilet facilities and sanitation within

accessible reach of households, especially in rural areas and urban slums. Women's participation must be ensured in the planning, execution and maintenance of such services.

1.2.6 Health Consciousness

Health consciousness is describing an attitude in which one has an awareness of the healthiness of one's diet and life-style. The term lays stress on the high risk of malnutrition and disease that women face at all three critical stages viz. infancy and childhood, adolescent and reproductive phase. Intra-household discrimination in nutritional matters vis-a-vis girls and women are to be sought to be ended through appropriate strategies. And it is women who can do this.

1.2.7 Solid Waste Management

Solid-waste management is the collecting, treating, and disposing of solid material that is discarded because it has served its purpose or is no longer useful. Improper disposal of municipal solid waste can create unsanitary conditions, and these conditions in turn can lead to pollution of the environment and to outbreaks of vector-borne disease—that is, diseases spread by rodents and insects. The tasks of solid-waste management present complex technical challenges. They also pose a wide variety of administrative, economic, and social problems that must be managed and solved. (<http://www.britannica.com/EBchecked/topic/553362/solid-waste-management>)

Solid waste management is a polite term for garbage management. As long as humans have been living in settled communities, solid waste, or garbage, has been an issue, and modern societies generate far more solid waste than early humans

ever did. Daily life in industrialized nations can generate several pounds (kilograms) of solid waste per consumer, not only directly in the home, but indirectly in factories that manufacture goods purchased by consumers. Solid waste management is a system for handling all of this garbage, and includes municipal waste collection, recycling programs, dumps, and incinerators.(<http://www.wisegeek.org>)

Solid waste management (SWM) may be defined as the generation, collection, transfer and transport, processing and disposal of waste. It is also responsive to principles of health, economic, engineering, conservation, aesthetics environmental consideration and public attitudes. The solution of solid waste management may involve in different fields such as city and regional planning, geography, economic, public health, sociology as well as engineering and material science.

1.2.8 Pollution

According to The American Heritage Science Dictionary (2002) “Pollution is the contamination of air, water or soil by substances that are harmful to living organisms.”

Pollution is the action of polluting especially by environmental contamination with man-made waste; also the condition of being polluted (www.merriam-webster.com/dictionary).

Pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat and light. Pollutants, the components of pollution, can be either foreign substances or naturally occurring contaminants. Three factors

determine the severity of a pollutant, its chemical nature, the concentration and the persistence. It is women who are really the victim of pollution. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the spilling of oil or disposal of industrial waste.

1.2.9 Household Management Capacity

The term ‘household management capacity’ here needs attention to the quality of a woman to provide adequate capacity to make control and manage over the family and family-related issues and matters.

1.2.10 Education

Dr. Radhakrishnan says, "Education, to be complete must be humane, it must include not only the training of the intellect but the refinement of the heart and the discipline of the spirit." (Mukherjee, K. K., 1972)

Tagore thinks, "Education means enabling the mind to find out the ultimate truth which emancipates us from the bondage of the dust." (Mukherjee, K. K., 1972).

Aristotle speaks of Education as, "the certain of a sound mind in a sound body." (Chaube, S. P., 2009).

1.2.11 Empowerment

The word empowerment acquires different meanings in different socio-cultural and political contexts. The concept of self-strength, control, self-power, self-reliance, own choice, life of dignity in accordance with ones values, independence, own decision making, awakening, capability are embedded in the generalised idea of empowerment. Empowerment is of intrinsic value but it also has instrumental value. In the broadest sense empowerment is the expansion of freedom of choice and action. It means increasing ones authority and control over the resources and decisions that affect ones life.

1.3 Objectives of the Study

- (i) To study the environmental awareness of women to manage the environment.
- (ii) To find out the participation of women in various environment-related activities to manage and protect the environment.
- (iii) To study the participation of women in policy framing and decision making related to environmental issues for maintaining the environmental balance.
- (iv) To find out the scope of common women participation in different day to day activities related to environmental protection on various fields, like health and nutrition, child care and rearing, afforestation etc.
- (v) To find out women participation in proper and effective use of nature and natural resources to reduce environmental pollution.
- (vi) To explore whether women having better skills in environmental management can reach empowerment.

1.4 Methodology

The study has been conducted with a view to women and their participation in environmental management in the District of Nadia in West Bengal. To conduct this study a systematic plan has been developed by the researcher.

1.4.1 Method

The present study has been carried out through descriptive survey method. The details regarding sample, tools, procedure of data collection are reported under:

1.4.2 Type of Research

The type of research is Descriptive Survey type.

1.4.3 Dimension

The study has been based upon five dimensions. These five dimensions covered the major aspects of participation in Environmental Management. The dimensions are as follows: -

1. Awareness.
2. Eco-Friendliness.
3. Solid Waste Management.
4. Effective Use of Natural Resources.
5. Policy Framing and Decision Making.

1.4.4 Population, Sampling and Representative Sample

Women both in rural and urban areas in the District of Nadia are the population of the study. But to conduct the study more effectively, about 300 women from four Grampanchayets and four Municipalities of the District of Nadia have been chosen randomly as samples.

1.4.4.1 Source

Rural and Urban areas in the District of Nadia.

1.4.4.2 Sample Size

More than 300 women have been participated in the present study.

Distribution of samples in different categories

Table 1.1. Distribution of samples in different categories according to geographical location

Geographical Location	Gender (Only female)
Rural	150
Urban	150
Total	300

The researcher has collected the Samples for her research work from rural and urban areas.

Diagram 1.1. Area-wise Stratification

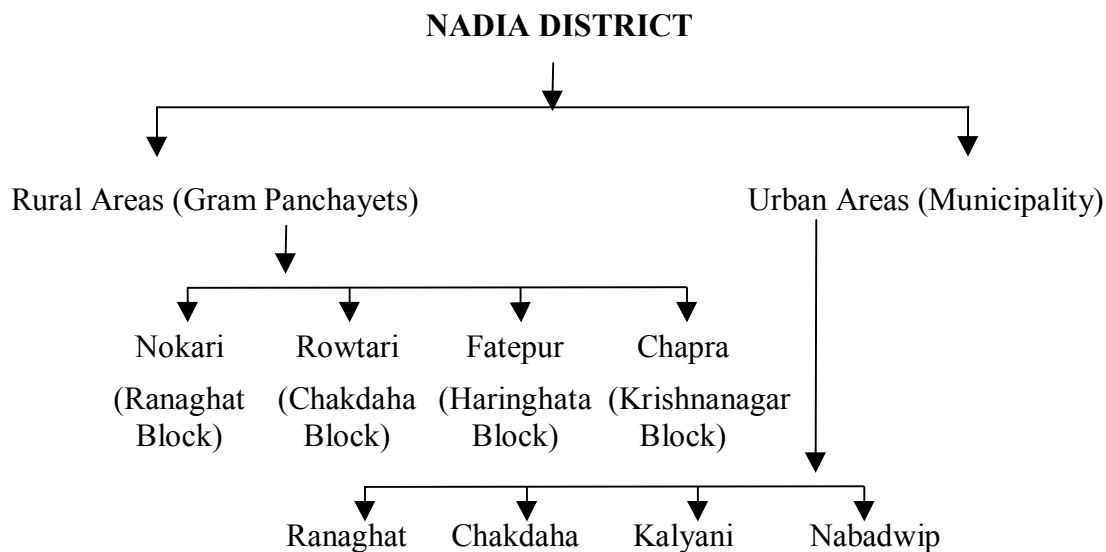


Table 1.2. Area-wise Sample Distribution

Rural					Urban				
Nokari (Ranaghat Block)	Rowtari (Chakdaha Block)	Fatepur (Haringhata Block)	Chapra (Krishnanagar Block)	Total	Ranaghat	Chakdaha	Kalyani	Nabadwip	Total
35	40	35	40	150	35	40	35	40	150

Diagram 1.2. Age-wise Stratification

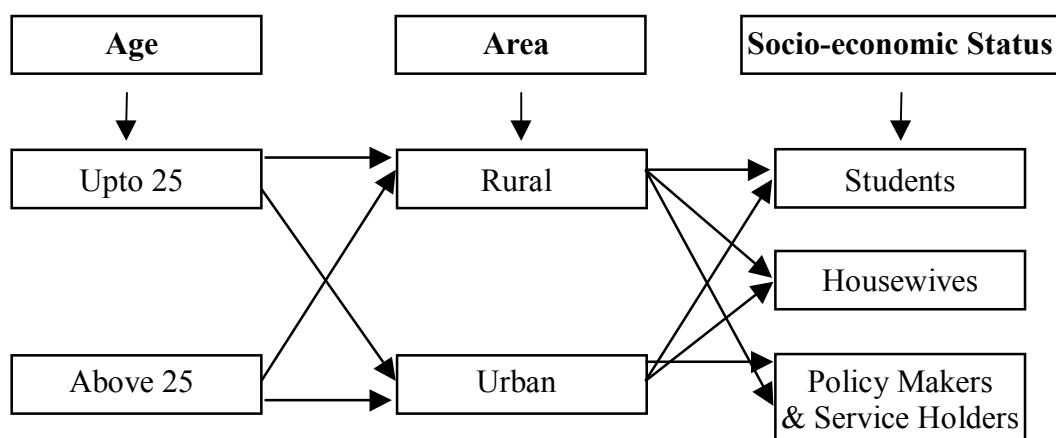


Table 1.3. Age-wise Sample Distribution

Area	Rural			Urban			Total
Socio-economic status	Student	Housewives	Policy Makers & Service Holders	Student	Housewives	Policy Makers & Service Holders	
Age upto 25	25	25	25	25	25	25	150
Age above 25	25	25	25	25	25	25	150
Total	50	50	50	50	50	50	300

1.5 Research Instruments

1.5.1 Tools and Techniques

The following research tools have been used in the present study for collecting data. The tools are selected by applying yardsticks of relevance, appropriateness, reliability, validity and suitability. The tools, used to collect data for study are:

- i. Comprehensive Questionnaire.
- ii. Interview.

1.6 Scope and Delimitation

The study has been conducted to estimate the participation of women in the district of Nadia in W.B. with special reference to education, socio-economic condition, awareness, participation in Social and environmental management. Considering those points the study has been delimited under the following headings.

1.6.1 Geographical Area

This type of study would be conducted in the whole district of Nadia. But considering the feasibility of the study it has been delimited to four Gram Panchayets and four Municipalities of the said district.

1.6.2 Women

This type of study would be conducted with all categories of women in the district of Nadia. But it is quite impossible to carry out the study with this huge population. So, the study has been restricted on about 300 female belonging to both rural and urban areas of the district.

2. Findings

2.1 Findings from Hypotheses Testing

After successful completion of the statistical analysis of the collected data, the researcher obtained the following major findings of her study :

Findings 1: The researcher has discerned no significant difference of mean in Rural Students between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 2: The researcher has discerned significant difference of mean in Rural Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 3: It has been found that there is no significant difference of mean in Rural Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 4: It has been observed from the study that there is no significant difference of mean in Urban Students between age group upto 25

and above 25 with respect to participation in environmental management.

Findings 5: The researcher has discerned no significant difference of mean in Urban Housewives between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 6: The researcher has found that there is no significant difference of mean in Urban Policy Makers and Service Holders between age group upto 25 and above 25 with respect to participation in environmental management.

Findings 7: The researcher has discerned no significant difference of mean in age upto 25 between Rural and Urban Students with respect to participation in environmental management.

Findings 8: It has been found from the study that there is significant difference of mean in age upto 25 between Rural and Urban Housewives with respect to participation in environmental management.

Findings 9: It has been observed from the study that there is significant difference of mean in age upto 25 between Rural Policy Makers and Service Holders and Urban Policy Maker and Service Holder with respect to participation in environmental management.

Findings 10: The researcher has observed that there is no significant difference of mean in age above 25 between Rural Students and Urban Students with respect to participation in environmental management.

Findings 11: The researcher has discerned no significant difference of mean in age above 25 between Rural Housewives and Urban Housewives with respect to participation in environmental management.

Findings 12: It has been observed from the study that there is no significant difference of mean in age above 25 between Rural Policy Makers and Service Holders and Urban Policy Makers and Service Holders with respect to participation in environmental management.

2.2. General Findings

Findings 1: Promotion of environmental participation through awareness and education is a social need.

Findings 2: Indian women should take a great role in conservation of environment, as there is always irregular and unplanned development in rural and urban areas.

Findings 3: Sympathetic attitudes towards environment should be development among general people by the women.

Findings 4: Women can ensure that it is our responsibility to participate in different programme of environmental awareness.

Findings 5: Achievement and awareness are keenly related on the basis of environmental values which must first come from mother who is also a woman.

Findings 6: They are women who can create necessary arrangements to protect environment and its necessary diversities.

- Findings 7:** Women have greater awareness regarding environment, as their life-patterns are very much linked and dependent on environment.
- Findings 8:** Lack of awareness about conservation can cause extinction of many rear species from the environment; it is women who being a mother can teach her child or children to protect them.
- Findings 9:** Cutting few trees if required is not harmful statistically accepted but may cause a great disaster in future generations. A woman can interpret it better to the next generation.
- Findings 10:** Wildlife conservation, creation of National Park and other preservative measure are not necessary for maintaining environment awareness, accepted in calculation.
- Findings 11:** It is inferred from the statistics that human values especially woman value, can protect environment.
- Findings 12:** Rural women are more environment-friendly.
- Findings 13:** Natural influence and contribution of Environment Education are influencing for generating environmental awareness.
- Findings 14:** Plantation is an urgent need in awareness-generating programme.
- Findings 15:** Environmental awareness is not directly or indirectly balancing the ecosystem but it is environmental participation, which can do it properly.

2.2.1. Findings from Graphical Analysis

- Findings 1:** About 87% people (women from both rural and Urban) believed positively that the nature elements like tree, water, soil, air etc. would be very important for an living directly or indirectly where 11.5% believed it normally and to 1.5% it did matter nothing.
- Findings 2:** 70.5% women believed positively that the amount of rainfall would lessen if the numbers of trees would be reduced.
- Findings 3:** 74% women in both rural and urban areas positively believed that if one would be compelled to cut old trees, then the individual should plant new tress.
- Findings 4:** 17.5% women believed positively that there would be no harm in washing clothes in ponds. 82.5% women in urban areas believed that water bodies ought to be protected. What would be amazing should be that in rural areas, especially in most of the Gram Panchayet areas 42% rural and illiterate women believed that there would be no harm in washing clothes in ponds. Hence, the environment education should come in.
- Findings 5:** 66.5% women positively believed that the use of bio fertilizer in cultivation would never pollute but would enhance fertility.
- Findings 6:** 71% women agreed with the view that forest animals should be conserved and protected.

- Findings 7:** 47.5% women in both rural and urban areas agreed that the disposal of garbage in the house should be done in adjacent road or pond.
- Findings 8:** 60% was of the strong opinion that we should drink purified water; 22.5% normally, 8% knew nothing; 9.5% it did not any matter whether water should be purified or not.
- Findings 9:** 61% women in both rural and urban areas used cane bamboo basket to keep fruits, but in urban areas 38% women used fashionable thermocol dishes in household occasions. 43% women in both rural and urban areas liked to use plastic bags for shopping.
- Findings 10:** 82.5% women in both rural and urban areas agreed that they would like to plant flowers and fruit trees in vacant places of houses. Hence they took the support of their families. Hence the percentage was of 55.5%.
- Findings 11:** In rural areas, now a days too 49% women cooked in earthen pots.
- Findings 12:** Only 10.5% women believed that waste papers also would pollute our environment.
- Findings 13:** 60.5% women in both rural and urban areas believed that plastic bags should be banned.
- Findings 14:** 33.5% women in rural areas lived with animal husbandry. But they were almost ignorant about their nurturing only 08% believed that in case of illness they should be treated. But 40.5 % believed that they should be sold if diseases would have affected the domestic animals.

- Findings 15:** 53.5% women in both rural and urban areas believed that their opinion had no values regarding the purchase of household products like food, utensils, dresses etc.
- Findings 16:** 53% women believed that a woman would decide herself the number of children. But in reality, it would not. So, women participation should be increased to manage the environment well.
- Findings 17:** Regarding health consciousness, women would also lagging behind. In both rural and urban areas above 60% women believed that when any of their family members would fall ill, they would bring medicine from shop without consulting doctors and vaccination would be no value to protect child's health. 65% women did not know the meaning of 'sanitation'. The same population believed that Aids might be transmitted by touch. Only 11% women believed that it should be essential to brush our teeth at night than morning. 88% mother was of the opinion that breast milk should be the primary food for building a child health. But the service holder mothers could not do the practice well. So, women would have an important place in decision making.
- Findings 18:** 16.5% women believed that they could do nothing regarding wastage of water from tap. 46% women in both rural and urban areas would waste water unnecessarily. It might be alarming.

Findings 19: 83.5% women from both rural and urban areas believed that education not only would create scope for employment but also would teach how to keep environment clean.

Findings 20: 84% women from both rural and urban areas had firm belief that the first step to be independent should be to respect oneself.

3. Conclusion

The findings showed participation and awareness in recycling and green spaces including factors such as creating, protecting and preserving green spaces, garbage segregation, collaboration and following up on neighbourhood's environmental issues. Women should take a great step towards preserving the environment and can increase their participation level. Women's participation in these matters, in neighbourhood's level, can protect the environment from destruction, Planting trees is one of utmost effective and economical ways to soften the urban environment.

In this current century many women have come outside the home and have made an identity of their own but still there is far way to go. If women would not get their due respects in their own home, the achievement outside the world would not satisfy them. The opposite of patriarchy should not ever be matriarchy but it should be equality. So women should not be overpowered they should be equally powered so that the gender liberalisation comes to an end. It is a work for man, and it is a work for woman – this kind of thinking should be given a new thought. Both the home and the world are equally important for men and women so they should help each other in both the spheres to make this society a better one. Lastly women are

being addressed as homemakers but if they are maltreated in their homes the home they would make will only be made by concrete elements not by affections. Home and Society should not be a place of domination for women rather it should be a place of free expressions for them. Then and only then, we can get a cleaner, greener and better-balanced society for ourselves and for our next generations.

4. Limitations of the Study

- a) The study has been restricted only four Gram-Panchayets and four Municipalities in the district Nadia.
- b) A large number of village women working in the field of agriculture and women in service have been taken for the study. Thus findings of the study cannot claim for generalisation.
- c) The rapport has been made with the samples but tribal women have some conservation, which may have some reflections on the responses.
- d) In some situations electronic gadget has been used at the time of collection of data which may have some impact on the responses.

5. Suggestions for Further Research

- a. Studies may be conducted in different categories of Women separately for Socio-Political Employment.
- b. Comparative study may be done on Gender Participation in Environmental Management.

- c. Self-Help Groups and Sustainable Development may be studied thoroughly.
- d. National Policy for the empowerment of Women and the Implications of those Policies can be thoroughly chalked out.
- e. Studies may also be conducted on Women and Minority Groups in Environmental Management etc.
- f. Studies may also be conducted on Women and Environment Awareness.
- g. Studies may also be conducted on Women, Natural Greenery and Eco-friendly Activities.
- h. Studies may also be conducted on studies may also be conducted on Women and Household Management.
- i. Studies may also be conducted on Women, Health, Sanitation and Nutrition.
- j. Studies may also be conducted on Women and Animal Husbandry.
- k. Studies may also be conducted on Women and Solid Waste Management.
- l. Studies may also be conducted on Women and their Participation in Reducing Pollution.
- m. Studies may also be conducted on Women and Empowerment.
- n. Studies may also be conducted on Chipko Movement and the Role of Women.

- o. Studies may also be conducted on Appiko Movement and the Role of Women,
- p. Studies may also be conducted on Narmada Bachao Andolon and The Role of Women,
- q. Studies may also be conducted on Green Belt Movement and The Role of Women,
- r. Studies may also be conducted on Navdanya Movement and The Role of Women,
- s. Studies may also be conducted on Kenyan Land Takeover etc. and The Role of Women.

REFERENCES

- Abbasian, E., Broghani, M. and Razmi, J.M. (2012). *The relationship between Women's Empowerment and Environment*, Anmol Pub., New Delhi, pp. 22-25.
- Agarwal, B. (1985). *Neither Sustenance nor Sustainability; Agricultural strategies, Ecological Degradation and Women in Poverty*, Zed books, London, pp. 307-330.
- Azumah, A. (1988). *Women and Agricultural Development in Nigeria, Role of Women in Development*, Kaduna Pub., pp. 12-18.
- Bailey, C. J. (1998). *Congress and Air Pollution, Environmental Policies*, New York, Manchester University Press, pp. 23-25.

- Bennett, Lynn. (2002). *Using Empowerment and Social Inclusion for Pro-Poor Growth: A Theory of Social Change*, Working Draft of Background Paper for Social Development Strategy Paper. Washington, DC: World Bank, pp. 45-47.
- Brydon, L. and Chant (1985). *Women in the third World Gender Issues in Rural and Urban Areas*. Edward Elgar Publishing, Hants, England, pp. 28-30.
- Canadian Commission for UNESCO (2006). *United Nations Decade of Education for Sustainable development (2005-14): Canada's Responses to the UNESCO Questionnaire*. Ottawa: Council of Ministers of Education, Canada and the Canadian Commission for UNESCO.
- Canadian Commission for UNESCO (2006). *United Nations Decade of Education for Sustainable Development (2005-14)*.
- David, H. (2003). *Chipko Andolan Gandhi in his Time and Ours: the Global Legacy of His Ideas*. Hurst & Co. Pub., p. 221.
- Desai, N. and Krishnaraj, M. (1990). *Women and Society in India*, South Asian Books, p. 96.
- Eblen, R. and Eblen, R. (1994). *The Encyclopedia of the Environment*. New York: Houghton Mifflin Company, pp. 432-433.
- FAO (1994). *Improving the Relevance and Effectiveness of Agricultural Extension activities for Women*. United Nations, New York, pp. 72-76.
- Franzen, A. (2003). *Environmental Attitudes in International Comparison: An Analysis of the ISSP Surveys 1993 and 2000*. Social Science Quarterly, pp. 297-308.

- Hardy T., Wiley, John and Sons (2003). *Climate Change: Causes, Effects and Solutions*, Hub. Pub., England, pp. 95-99.
- Iyer, Justice Krishna (1993). *Human Right to Woman, Women-March Towards Dignity-Social and Legal Perspective*, Regency Pub., New Delhi, pp. 78-82.
- Jandhyala, B.G. Tilak (1992). *Inequality in Education by Sex in India*, in *Chetana. Women's Struggles for Equality and Emancipation*, Discovery Pub. House, New Delhi, pp. 10-13.
- Joshi, G. (1981). *Forest Policy and Tribal Development*. Social Action, pp. 446-468.
- K.D.Roza (2010). *Empowerment of Women: The Impact of Employment*; Abhijeet Pub. Ltd., Delhi-094, pp. 86-91.
- Kapur, Promila (2002). *Socio-economic Empowerment of Women in the Family*, Department of Social Work, New Delhi, pp. 17-21.
- Kwagala, B. (1999). *Katwogo and Kawaala Low-Income Urban. Settlements in Kampala, Uganda: Gender and the Management of Urban environmental Health on D.L. Smith, women managing resources*. Mazingira Institute, Nairobi, pp. 90-92.
- Lalage, B.(1990). *Action Aid Development Report Preparing the Future in Women, Literacy and Development*. Somerset,London, pp. 1-10
- Maye. (1994). *Women: The Resource Managers*. UNEP, Vol. 6 No. 4, pp. 23-24.
- McAllister Opinion Research (2006, April 3). *The Sustainability Survey, Canadian Public 2006 and Canadian Thought Leaders 2006*. Top line Report. Vancouver: McAllister Opinion Research, pp. 25-32.

- Misra, K. Kamal (ed.) (2006). *Recent Studies in Indian Women*, B. N. Pub. Pvt. Ltd., New Delhi, pp. 32-35.
- Mohammed, N. (1991). *Pattern of Land use in Sharada, Kano and the Implication of Urban Expansion on Fringe land*. An unpublished M.sc thesis, Bayero University, Kano. p. 167.
- Narasaiah, Lakshmi M. (2001). *Women, Children and Poverty*; Discovery Pub. House, New Delhi, pp. 18-25.
- Nebasina, Ngwa E. (1995). *The Role of Women in Environmental Management, an Overview*, Springlet Pub., New Delhi, pp. 35-37.
- Neumayer, E. (2010). *Human Development and Sustainability*, Human Development Report, UNDP.
- Pahi-Wost, C. (2007). *The Implications of Complexity for Integrated Resource Management*, Narosa Pub., New Delhi, pp. 28-32.
- Pal. G. (1998). *Environment and Pollution*, Das Gupta and Company Pvt. Ltd. , Kolkata, pp. 75-80.
- Richard Peet and Michael Watts (1996). *From Chipko to Uttaranchal: Haripriya Ranjan Liberation ecologies: environment, development, social movements*, Routledge Pub., New Delhi, pp. 205-206.
- Rohwedder, R. (2004). *The Pedagogy of Place: Campus Sustainability and the Environmental Technology*, Sonoma State University. pp. 1-7.
- Roy, Debal Singha (ed.) (2001): *Social Development of Marginalised Groups*, Sage Pub., New Delhi, pp. 75-78.
- Roy, Kalpana (1999). *Women's Oppression and Protection of Law*, Rajat Pub., New Delhi, pp. 18-22.

- Saeed, Fouzia (2001). *Taboo: The Hidden Culture of a Red Light Area*, Oxford University Press, New Delhi, pp. 32-38.
- Shoma A. Chatterji (1988). *The Indian women's Search for an Identity*, Vikas Pub. House Pvt. Ltd., New Delhi, pp. 42-48.
- Singh, K.U & Nayak, K.A (2010). *Women Education*, Commonwealth Pub. New Delhi-002, pp. 72-78.
- Singh, S. K. (2008). *Environmental Education and Ethics.*, Amrit Prakashan, Varanasi, pp. 22-28.
- Singh, Sukanya Nihal (2001). *Prospectus for Women's Empowerment: Dynamics of Enablement*, Commonwealth Pub., New Delhi, pp. 18-24.
- Thampapillai, Dado, J. (2002). *Environmental Economics Concepts, Methods and Policies*, Oxford University Press, pp. 22-28.
- Ugbomeh, George M.M, (2001). *Empowering Women in Agricultural Education for Sustainable Rural Development*, Oxford University Press, pp. 13-18.
- UNESCO (2002). *Education for Sustainability – from Rio to Johannesburg : Lessons Learnt from Decade of Commitment.*
- Uzzell, D., Poi, E., & Badenas, D. (2002). *Place Identification, Social Cohesion and Environmental Sustainability*. Pluto Press Pub., pp. 26-53.
- Vandana, Shiva (2002). *Ecological Crisis and Water Wars: Privatization, Pollution and Profit*. Pluto Press Pub., p. 3.
- Varghese, Jaiman (2012). *Women Empowerment Through Literacy Campaign*, Concept Pub. Company, New Delhi-059, pp. 18-22.
- WCED (1987). *Our Common Future*, Oxford University Press.

Wieringa, S. (1994). *Development and Change*. Blackwell Pub., UK, pp. 129-148.

Xaxa, Virrginius (2001). *Empowerment of Tribes, Social Development of Marginalized Groups*, Sage Pub., New Delhi. pp. 89-92.

Articles

Abou El-Azm M. (2004). Case Study on Raising Awareness of Women's Role in Environmental Issues in Fayoum, *CIHEIM*, 64 : 67-71.

Abou-El-Azm, M. (2004). Case Study on *Raising Awareness of Womens' Role in Environmental Issues in Fayoum*, *Humanities and Social Sciences Paradigms*, 2(1) : 13-14.

Aladuwaka, Seela and Momsen, Janet (2010). Sustainable Development, Water Resource Management and Women Empowerment, *Humanities and Social Sciences Paradigms*, 2(1) : 10-14.

Ali, Romana and Sinha, Bipasha (2013). A Study of Environmental Awareness and Ecological Behaviour among Female B.Ed. Students. *Indian e-Journal on Teacher Education*. 1(1) : 14-15.

Azizi, M., M. Wahab, R. Huron and M. Nawawi (2010). Environmental Awareness and Attitude among Iranian Students in Malaysian Universities *EnvironmentAsia*. 3(1): 1-10.

Bentley, M. (2014). The Household Management in Rural North India, *International Journal of Sociology and Anthropology*, 2(2) : 86-91.

Bloom, J. (2014). Nutrition and Eating Habits of Women, *Journal of Health Awareness and Social Science*, 4(2) : 81-86.

Day, J. (2007). Elite Womens' Household Management, *The Economic Gender*, 1(1) : 11-15.

- Diaz, E. (2008). Self-rated Health among Mayan Women Participating in a Randomize Intervention Trial Reducing Indoor Air Pollution. *Research on Environmental Science*, 2(2) : 40-45.
- Hoerisch, H. (2002). A Comparative Study on Environmental Awareness and Environmentally Beneficial Behaviour in India, *The International Journal of Engineering And Science*, 2 (3) : 34-38.
- Ivanova, P. (2007). Womens' Roles in the Houses, *International Journal of Household Management*, 4(2) : 70-76.
- Jatindra, P. K. (2009). E-Waste Management : A Case Study of Bangalore in India. *Research on Environmental Sciences*, 4(2) : 15-19.
- Jayanta Mete (2013). A Study of Environmental Awareness and Ecological Behaviour among Female Student Teacher in B.Ed. Course, *Indian e-Journal on Teacher Education*, 1(1) : 31-41.
- Krishna, A. (2013). Case Study of Solid Waste Management at a College Campus, *Asial Rural Sociology Association*, 4(1) : 82-86.
- Kumar, Sanjay (2013). Environmental Awareness among Rural Folks of Hamirpur District, H.P., *The International Journal of Engineering And Science*, 2 (1) : 81-83.
- M. Nuratu (2012). Gender Participation in Environmental Management in Tofa Local Govt. Area of Kano State, , *International Journal of Behavioural Social and Movement Sciences*, 3(2) : 40-45.
- Nagra, Vipinder (2013). Environmental Education Aawareness among Senior Secondary School Teachers, *International Journal of Behavioral Social And Movement Sciences*, 2 (1) : 242-251.

- Neelam, Dahiya (2013). A Study of Environmental Awareness and Attitude towards Environmental Degradation of Senior Secondary School Students, *International Journal of Engineering, Management, Humanities and Social Sciences Paradigms*, 2(1) : 15-26.
- Poonam Mahajan and Nidhi Darbari (2014). A Comparative Study of Environmental Awareness of School Students in Relation to Standard and Sex, *International Journal of Education and Information Studies*. 4(1) : 5-7.
- Raut, C. (2004). Estimation on Women Labour in Animal Husbandry Activities, *International Journal of Anthropology*, 2(1) : 78-83.
- Sankar, Siddhatha (2006). Indoor Air Pollution and Women Health in the Informal Sector. *East Journal of Education*, 2(2) : 37-53.
- Sengupta, Madhumala, Das Jayanti and Maji Pintu (2010). Environmental Awareness and Environment Related Behaviour of Twelfth Grade Students in Kolkata: Effects of Stream and Gender, 5 : 1 – 8.
- Shubhangna, Sharma (2009). Health Awareness of Rural Adolescent Girls: An Intervention Study, *J Soc Sci*, 21(2): 99-104.
- Tripathy, A. (2009). Women's Economic Contribution through Their Unpaid Household Work, *Journal of Sociology and Science*, 21(2) : 75-82.
- Upadhyay, S. (2011). Participation of Farm Women in Animal Husbandry, *Journal on Environmental Conservation*, 2(1) : 18-22.
- Wakar Amin and M. Mudasir Naqshbandi (2013). Effective Awareness Generation Methods for Rural Sanitation Campaign: A Study from a Village in Haryana, *International Journal of Sociology and Anthropology*, 5(3) : 78-83.

Wickramaringhe, Anoja (1997). Women and Minority Groups in Environmental Management. *Journal on Minority Groups*, 1(1) : 10-11.

Zugravu, A. (2012). Eating Habits and Influential Factors for Mothers and Children in Romania, *Journal of Psychology and Business*, 2(2) : 54-59.

Website

<http://www.springerlink.com> (content) gt 1 km 1460361x21k (retrived on 26-4-2011).

The United Nations Environment Programme (UNEP) on Women and the Enviroment (2005). From [http://www.unep.org/women_watch / forum\)](http://www.unep.org/women_watch/forumreview/environment/index.html) review/environment/index.html, (accessed on 01.4.2011).

<http://westcoastdm.co.za/about/environmental-management>, retrieved on 5-01-2014.

[http://www.neyahotels.com/en/consciencia –ambiental.html](http://www.neyahotels.com/en/consciencia-ambiental.html), retrieved on 5-01-2014.

<http://homeguides.sfgate.com/ecofriendly-mean-78718.html>, retrieved on 5-01-2014.

<http://www.wisegeek.com/what-is-animal-husbandry.htm>, retrieved on 5-01-2014.

<http://www.britannica.com/EBchecked/topic/553362/solid-waste-management>,
retrieved on 5-01-2014.

<http://www.jstor.org/stable/4315726>, retrieved on 25-4-2011.

Burney, S. and Schnarr, E. (2012, June 16), *Women and Sustainability: Recognizing the Role of Women at Rio+20*, retrieved on 5th March, 2013 from [http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing- the-role-of-women-at-rio20](http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing-the-role-of-women-at-rio20)

Burney, S. and Schnarr, E. (2012, June 16), *Women and Sustainability: Recognizing the Role of Women at Rio+20*, retrieved on 5th March, 2013 from <http://blogs.worldwatch.org/nourishingtheplanet/women-and-sustainabilityrecognizing-the-role-of-women-at-rio20>.

Women and Environment, (2013, Feb. 16), retrieved on 5th March, 2013 from http://en.wikipedia.org/wiki/Women_and_the_environment

<http://dictionary.reference.com/>, retrieved on 5-01-2014.

<http://www.wisegeek.org>, retrieved on 5-01-2014.

WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY

*Thesis submitted to the University of Kalyani for the Degree of
Doctor of Philosophy*

In
EDUCATION

ABSTRACT

By
Trishna Goswami (Kundu)

DEPARTMENT OF EDUCATION
University of Kalyani
Kalyani, Nadia

2015



University of Kalyani
Kalyani, Nadia

Prof. (Dr.) Dibyendu Bhattacharyya
Professor, Department of Education
University of Kalyani
Kalyani, Nadia.

Certificate

This is to certify that the research work entitled “WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY”, submitted by Smt. Trishna Goswami (Kundu) in fulfilment of the requirements for the award of Ph.D. degree in Education under the Department of Education, University of Kalyani is based on the results of an important research work accomplished by her. No part of this work has been submitted for any other degree. She has completed the research work under my guidance.

Dr. Dibyendu Bhattacharyya
Professor
Department of Education



Dr. Asit Kumar Das

Former Dean, Students' Welfare (M. Sc., B.Ed., Ph.D.)

University of Kalyani

Kalyani, Nadia, West Bengal- 741235

Website: www.klyuniv.ac.in

Residence

P-14, Regent Estate, Flat-3B

Kolkata 700092; Website: www.iisrr.in

(M) 09433082740; email: asitkd09@gmail.com

Certificate

This is to certify that the research work entitled "WOMEN PARTICIPATION IN ENVIRONMENTAL MANAGEMENT : A STUDY", submitted by Smt. Trishna Goswami (Kundu) in fulfilment of the requirements for the award of Ph.D. degree in Education under the Department of Education, University of Kalyani is based on the results of an important research work accomplished by her. No part of this work has been submitted for any other degree. She has completed the research work under my guidance.

Dr. Asit Kumar Das
Former Dean, Students' Welfare
University of Kalyani
Kalyani, Nadia