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**GENDER AND ENVIRONMENT LINKAGES IN
RURAL CONTEXT: A CASE STUDY OF
VILLAGE KUTERHA OF DISTRICT
CHAKWAL**

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Submitted in partial fulfillment of the requirement for the
Master of Philosophy in Environmental Sciences
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Islamabad.

**Supervisor:
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February, 2010

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Dedication

I would like to dedicate my work to my parents because whatever I have done is because of their prayers, love and patience.

(Acceptance by the Viva Voce Committee)

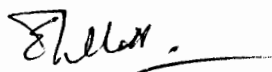
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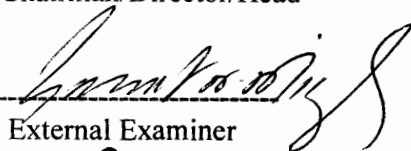
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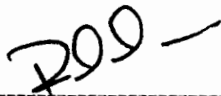
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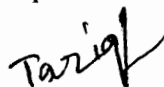
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ABSTRACT

Gender based roles and responsibilities of men and women are different in families, house holds and communities. Their knowledge of natural resources is totally different from each other and they have varying access to, and control over natural resources.

The aim of this study was to understand different roles of men and women which they play to develop solutions for more sustainable use of natural resources. As study was aimed to explore the links of gender relations and environment in rural context, so village Kuterha of district Chakwal was selected as a case study.

Sample size for the current study was hundred (100), and respondents of the study were selected by random walks in the area. Respondents of the study included sixty (60) females and forty (40) males. Questions were asked from each participant pertaining to drinking water sources, sanitation facilities, diseases, waste management, rights of women over natural resources, women roles and responsibilities in household and at community level and about their roles in decision making process of crop sale, their own family size, and of natural resource management.

Results of the study showed that women rights were completely neglected and they didn't have a just share in land tenure. Few cases (2%) where land was registered in the names of females, actual authority was in the hands of male family members.

Women perspectives, needs, knowledge and proposed solutions on their behalf's were found to be ignored. As girls were considered responsible for collecting fuel wood and water, it seemed to be reason of their high school dropout rates. People were using many hazardous agricultural chemicals (pesticides and fertilizers), which were creating many health problems in women, especially when they were more vulnerable (during pregnancy and child birth). Their exposure to hazardous agriculture chemicals was found to be the main reason of illness, mortality and breast cancer.

Government should play its role in this regard. Recommendations made for the village of Kuterha include raising awareness among people about importance of mainstreaming women in decision making process for natural resource management and for their own family size, improving educational facilities, provision of piped water supply system, construction of hospital/dispensary and appointing lady health visitors in the area to educate the local women about family health and low fertility rates.

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I owe my deepest gratitude to most generous and marvelous master, Almighty Allah, the one and only God, Creator and Sustainer of the universe. He provided me with zest and strength to achieve my goals. I am indebted to elucidate that without the gorgeous lava of veneration of Almighty Allah, I would have been unable to complete this task.

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CHAPTER1

INTRODUCTION

Gender and environment relationship has become more explicit, especially in the last decade. Environmental degradation and developmental processes particularly stressed the woman of developing countries, where she is already overburdened with domestic chores, subsistence agriculture and hired work. There is a growing debate that highlights the relationship between gender and the environment. It could be helpful in avoiding conflicts and compromises between the interests of women and initiatives to enhance the environmental sustainability.

People usually perceive the term “Gender” as “Sex”. But in essence these two terms are different. Sex refers to biological differences, chromosomes, hormonal profiles, internal and external sex organs. Whereas gender describes the characteristics that a society or culture delineates as masculine or feminine (Wikipedia). The simplest explanation of gender is that, it is a social construction organized around a biological sex (Gregson et al., 1997).

The view that women have a special relationship with the environment is called ecofeminism, a movement that emerged in 1970s as the women movements and ecology movements developed simultaneously (Diamond & Orenstein, 1990). Feminists emphasize that women's reproductive systems, their menstrual cycles and their capacity to give birth organically place them closer to the physical world, the lunar cycles and the rhythms of nature. Women could be agents, victims and saviors in relation to environmental changes. In India women have hugged trees to prevent logging; in Kenya women have planted trees throughout the green belt; in Japan women have demanded accurate labeling of dangerous chemicals; in New York, Lois Gibbs (Who was often dismissed as a hysterical house wife) organized a clearing house for hazardous waste following her efforts to uncover the infamous "Love Canal" (Deborah Du Nann & Susan M. Koger, 2004). Women show a larger scope of justice with respect to well being of other species. According to Stern (1993), women are more likely to see the links between environmental conditions and harms to others. This analysis draws on the work of Carol Gilligan, who argued that women evaluate social dilemmas using an ethic of care.

Women's and men's responses to the environment are different and it is because of their physical and psychological attributes. There is a male dominated managerial hierarchy which discourages women from

being active and productive especially in science and technology. This was noted in the Times magazine issue of February, 2005; an article entitled “Who says a woman can’t be Einstein”. An IQ test showed that women use more parts of its brain than do men for the same tasks. Men do their thinking in more focused regions of the brain. Another finding shows that brain size peaks around age 11 ½ for girls, while the peak for boys comes three years later. Women and men see totally different things when looking at a landscape. Women can see colors and textures that men can not see and hear things the men can not hear and smell. Women are higher in aesthetic feelings and actions and even in some cultures women are more dutiful than men. But females have to keep a balance between marriage, family, and their career. Sometimes families camouflage talent of females. However this camouflage could also be by females themselves to gain acceptance by their societal values and norms. One study showed that women can thrive in any profession. For instance most medical doctors in Russia are women (Jennifer et al, 2006).

International Union for the Conservation of Nature and Natural Resources (IUCN) in 1984 was the first fora in which recommendations were made on women and environmental conservation, and a working group was established to promote the involvement of women at all levels of organization. However linkages between gender and environment were made explicit in the third

United Nations Women's Conference in Nairobi in 1985. A parallel NGO Forum the Environment Liaison Center (ELC), 1985 in Nairobi organized a series of workshops on Women, Environment and Development. The meeting concluded that, "*The growth of women's power and sustainability of development are ecologically tied*" (ELC, 1985). United Nations secretariat for United Nations Conference on Environment and Development (UNCED) appointed a special advisor on women and organized the symposium, "*Women and Children First: The Impact of Poverty and Environmental Degradation on Women and Children*" (Geneva, 1991). Agenda 21 was resulted by the advocacy activities during UNCED Conference, which includes more than 145 references to the specific roles and positions of women in environment and sustainable development. This vision was also reflected in Millennium Development Goals. A network of women ministers was also established in 2002.

"Women bring a unique voice to the challenges and opportunities of sustainable development. Their experience, their participation and their relationship are crucial to the success of the world environmental efforts" (The Network of the Women Ministers of the Environment).

Women tend to have more environmental awareness than men and act in more environment friendly way. For example they buy more environmentally sound products, their mobility behavior is less

environmentally harmful (CCGCC, gendercc.net). Rachel Carson (1962) was also a female who by writing a book “Silent Spring” alerted the world to the dangers of pesticides poisoning. In 1989 in the United Kingdom the Women’s Environmental Network (WEN) launched its “Wrapping in Rip Off” campaign on food packaging markets to reduce, reuse and recycle the packaging. WEN forced Stora, one of the biggest forest owners to abandon plan to cut ancient forests in Sweden. In Russia, women recently led a national campaign to ban nuclear power. In Venezuela, a woman is leading the non-profit volunteer guardians of the environmental association in Caracas to stop harmful mining practices that destroy the environment. In United States, women are demanding nutritious food that is free of harmful chemicals, pesticides and growth hormones (Statham, 2000).

There is a very important link between women and climate change. Climate change is no longer debatable; it is an undeniable fact. Climate change and environmental policies must be linked with gender, as women are often the first to be affected by changing environment. The Women’s Environment and Development Organization (WEDO) 2007, report on *Changing the Climate: Why Women’s Perspective Matters* stated that women are the most vulnerable to the effects of climate change. Women contribute less to global warming yet they will be easy target for its effects.

There is also very important relation between women and food security. As the state of world's environment is vital for global food security and both men and women as the world's food producers have stake in the preservation of environment and environmentally sustainable development. Poverty is the leading cause of environmental degradation in developing countries, where women farmers are trying to take out an existence on marginal lands with little education and no access to agricultural resources. Such a situation ultimately harms the environment. Women are needed to be informed about alternative methods of cooking, farming, heating and waste disposal. Gender-sensitive planning in training and technology development would not only improve production today, but it would also ensure the protection of environment for tomorrow.

“Agricultural productivity increases dramatically when women get the same amount of inputs men get” (Quisumbing, 1996).

Women's gardens are models of sustainable land use. They are typically dominated by perennial rather than annual vegetation and are fertilized with mulch, manure and crop residues. Home gardens provide sustainable yields and cause minimum environmental degradation under continuous use. A study in Nigeria found that women who grow intensive home gardens may cultivate 18 to 57 plant species including tubers, legumes, grains and fruit trees. As one expert stated that, *“Women may practice more multiple cropping, plant more*

carefully and have more knowledge of varieties than their husbands”.

Women are also at disadvantage of their share in food and nutrients within a household. International Food Policy Research Institute (IFPRI) recently measured the way food is distributed within a household in rural Bangladesh. The distribution was found to be unequal, males were favored who were receiving a disproportionate share of animal and fish products (IFPRI, Washington, D.C., 1998).

There are three philosophical approaches for women’s relation with development and environment.

1. Women in Development (WID)
2. Gender and Development (GAD)
3. Women, Environment and Development (WED)

The first attempt to tie together issues of development, women and environment was perhaps that of Carolyn Merchant (1989). WID concerns increased women’s participation in development, while the GAD looks not only integrating the women into development but also at empowering women and transforming unequal gender relation. These both views combines together to form WED approach that emphasized that any project which benefits the environment will necessarily benefit the women. But sometimes these projects increase the burden of already overworked women without serving their interests (Awumbila & Hanshall, 1995).

Poverty and environmental degradation are closely linked, and there is a concept of “Feminization of Poverty”. This is because of the fact that 70 percent poor of the world are women. The majority of 1.5 billion people living on \$ 1 a day are women (Martin, 2008). According to Toepfer; *“As majority of the world’s poor women play decisive roles in managing and preserving biodiversity, water, land, and other natural resources, yet their centrality is often ignored or exploited. This means that a change for better management of those resources is lost, along with opportunities for greater ecological diversity, productivity for human beings, it particularly affects the most vulnerable sectors of society, mainly women and children.”*

There is a very little information available about the impacts of environmental exposures on subpopulations, such as children, the elderly, those who are sick and pregnant women. Skin rashes and strokes are usually reported. For other health outcomes there are diabetes, kidney problems, liver problems and urinary tract disorders. Regulations are being evolved in USA to protect the women and children from environmental chemicals. In 1960s regulations were developed to protect pregnant women from exposure to tetragenic drugs....drugs that induce either structural or functional abnormalities (Hiltz, 2003). Fetal and early childhood exposures to environmental toxicants, such as lead, methyl mercury, polychlorinated biphenyl’s and tobacco smoke, have been associated with an increased risk of premature birth, spontaneous abortions, delinquency and intellectual

deficit, attention deficit and hyperactivity syndrome (Baghust et al, 1999). Similarly it is suggested by a number of studies that breast cancer is related to exposures to environmental compounds, such as some organochlorine substances. Also an association is being found between breast cancer and pesticides DDT and its derivatives DDE...both are banned in industrialized countries, but still are in use in the developing world. An epidemic in Turkey between 1955 and 1961 was seen which resulted the death of every new born child in the affected region that was breast fed and it was poisoning by the grain fumigant hexachlorobenzene (HCB).

Like environmental exposures, for natural disasters women are the first hand victim. Over the past decades, a number of natural disasters cause great losses to the world's population. Floods in Algeria, Bangladesh, Bolivia, Ethiopia, India, Mozambique, Nigeria, Sudan and Vietnam to volcanic eruptions in Indonesia, The Philippines and Democratic Republic of Congo and to earthquakes in Indonesia, India, Pakistan and Peru and many more unstable places were thrown into a state of crisis. In the wake of Tsunami that hit the Indian Ocean coastal community, images of women were splashed over the media. According to Oxfam report, only one eighty nine (189) out of six seventy six (676) survivors were females in four villages of Indonesia. Three times as many as women were killed as men in India and in one entire village the only women were the people to die. Reasons could

be many for high causality rate of women is concerned. Women were illiterate mostly, and were not able to see early warnings in newspapers. Secondly women tend to be removed from early warning systems. Moreover practices such as veil (Purdah) also prevented the women from being active in existing male-dominated warning systems. Women's role as caretakers of children and elderly members of the family also became the reason of their increased casualties. After the Indian Ocean Tsunami, local media reported that many women were found dead holding their babies in their arms. Post disaster situations also threatened women. Women were raped after having been dragged them out of water as a cost of saving their lives. Many more cases of sexual abuse and sexual harassment were also reported. Here it is important to note that women could play a pivotal role in disaster mitigation efforts. Women have the capacity to empower themselves when they are involved in the planning and implementation of disaster relief programs. Furthermore women are more likely to allocate house hold resources effectively than men. Women's participation can make the men realize the power of women. So implementing gendered sensitive programs would allow aid workers to assist the majority of those harmed in disasters (Shah, Payal K., 2006).

Women are the main producers of energy in developing countries and households are the main users of energy. But even then gender

roles and traditions have been largely ignored in this sector (Barbara, 1998). Energy decision makers often do not understand the relationships between gender roles, energy availability and social welfare. Women have marginal access to energy policy making and to energy itself (Clinton, 1995). Women offer creativity in devising strategies for energy management and use (Farhar, 1997). In developing countries many women gather wood for cooking which can lead to deforestation (Cecelski, 1992). Energia, an international network on women and energy is formed to engender energy and research, advocacy, and action aimed at strengthening the role of women in sustainable development (Farhar, 1997).

In Pakistan, no research is being conducted specifically regarding gender and environmental issues, except few efforts so far. A research article titled "Environmental health risks and gender in the Karakorum: Himalaya, Northern Pakistan" by Sarah Halvorson (2004), is one of these efforts. In this study, the way a woman in mountainous region takes care of the health of children and other family members to protect them from environment associated health risks has been explored. It is women's primary responsibility besides performing other daily tasks like cooking, food processing, food preservation, cleaning of house, disposing off animal wastes and manuring agricultural land with composited household waste. There are some civil society organizations in Pakistan (Oxfam, Patan, CWS, Concern

etc), which are working with communities especially female peasants to enhance their capacities to combat the disasters (Aguilar, 2006). The Government of Pakistan has taken a step in the form of National Disaster Management Authority (NDMA) to combat climate change by keeping in mind the gender sensitivities.

This study, **Gender and Environment Linkages in Rural Context: A Case Study of Kuterha Village of District Chakwal** is being conducted to investigate that how women, especially those in poor rural households in Pakistan are victims of environmental degradation in quite gender specific ways, on the one hand and on the other hand how they have been active agents in environmental protection. This study mainly focuses on a small village of District Chakwal, although the issues are clearly relevant to other parts of the third world as well. District Chakwal is mainly a rural agrarian area, and main source of income of the local people is agriculture. Chakwal is famous for cotton industry, ground nut crop, Barani Agriculture Research Institute and sweets commonly known as rewaryan. Saadat Hassan Anwar a socialist says, “If we can take care of our water and sanitation problems real soon, Chakwal can emerge as pollution free cosmopolitan canter of the country”.

On the whole it can be said that participatory planning procedures which allow different social groups to voice their concerns, are therefore a necessary basis for environmental interventions.

1.1 Objectives of the Study

- To assess the practical knowledge that the women of Kuterha village have of their environment.
- To focus on women as efficient resource managers of natural resources and untapped pool of labour.
- To compare the contradictions of environmental knowledge of females with the same inherent to male peasants.
- To assess the way and extent women are particularly susceptible or exposed to environmental degradation and hazards in the area.
- To integrate rural women's traditional knowledge and practices of sustainable development and resource conservation in the development of environmental management and extension programs.

- To understand the interventions necessary for integrating gender into promotion of green economy.
- To understand the interventions that can promote gender responsive policies at international, regional and local level.
- To focus on specific groups of women, particularly women with low income.
- To investigate the relationship between gender and some correlates of environmental concerns like self interests, traditionalism and openness to change.
- To develop a strategy that can be proposed to eliminate the obstacles to women's equal participation in sustainable development and their equal access to and control over natural resources.

CHAPTER 2

LITERATURE REVIEW

(Hayford, 1974). Almost everywhere women's lives are different in nature to men's; their relations to the earth, to its resources, and to the productive systems that people have evolved for making use of these resources, are not the same as, nor even parallel with, those of men.

(Buckingham, 2000). The relationship between gender and the environment is less obvious in the west where most people are more distant from the sources of their food supply, the energy and water they use. However, because of their biology, it is women who conceive, carry, give birth to and suckle children and this exposes them to a number of environmental roles as the main unpaid domestic worker in each household bring them closer to an environmental hazard.

(Vartan, 2004). Water-related diseases cause eighty percent (80%) of all the world's sicknesses, in the forms of hepatitis A, malaria, diarrhea, dysentery and schistosomiasis. These illnesses take healthy women away from being able to raise food crops, and thus exacerbate poverty. To turn the situation around, women need to be involved. "It is now

recognized that the exclusion of women from the planning of water and sanitation schemes is a major cause of their high failure rate," says the UN.

(Braidotti, 1999: 76). Rosi Braidotti explains the strong involvement of third world women in the environmental issues as follows: "Because women are more directly exposed to negative effects of environmental degradation in developing countries, they have taken up the issue as the main political point.

(Joekes, S. et all, 1994). For women, forest degradation makes it more difficult to collect wild herbs, fruits and natural medicines

(Afshar, 1987). In spite of large share of workload, women are excluded from natural resource management decisions. According to Afshar, it is the men who own the world's resources even when it is women who make them productive.

(Afshar, 1985). Among poor families women wages are often used to educate young men and/or support them while they seek better paid jobs and avoid the drudgery that their female relatives take on to enable them to improve their life chances.

(Gilligan, 1982). By analyzing some case studies on women's and men's behavior in special ethical conflicts, that women and girls, with respect to ethical questions, think "in another voice". They follow other ethical rules of behavior than men. Gilligan called this female ethical rule as "ethic of care".

(Plumwood, 1986). Gilligan's "ethic of care" is broadened by Plumwood to women's relationship to their natural environment. He claimed that there is an "unseen potential in women" for environmental strategies.

(Vandana Shiva, 1988) stresses the ethical point of "women as caretakers" and sees the linkage between nature and women as being due to gendered cultural development that led to a deeper spiritual connection of women to nature.

(Mies/Shiva, 1993). Maria Mies saw the "nearness" of women to nature as a result of societal historical developments in which women, because of their capacity to giving birth, are bound to nature in a special way.

(Dankelman/Davidson, 1988). Around the globe women are shaping the environment and caring for it. For most of them in the third world,

especially the poorest, a healthy environment is fundamental to their survival.

(Rocheleau, 1990). A detailed understanding of rights and responsibilities as determined by gender also provides a basis for interventions to address the specific resource management difficulties of women and men, as well as the conflicts between their rights and responsibilities. Environmental science and “the international environmental movement” have been largely cast as the domain of men.

(Berry, 1987). In all these arenas, the outcome of conflicts over rights in the crops farms depended on the political as well as the economic resources of the contestants and in both respects women were poorly endowed compared to man, and the odds stacked against them for winning their case.

(Berry 1993: 116). Women are normally entitled to cultivate land controlled by their husbands’ lineage but not to alienate or inherit it.

(Shiva, 1988). With the violation of nature is linked the violation and marginalization of women, especially in the third world. Women produce and reproduce life not merely biologically but also through their social role in providing sustenance.

(Farhar, Barbara C., 1998). Women are the main producers of energy in developing countries and house holds are the main users of energy. Because gender roles and traditions have been largely ignored in energy, the global potential for renewable energy has been negatively affected.

(Cecelski, 1992, p.14). It is not only women, but people and socioeconomic issues in general that have been ignored in much energy policy and planning.

(Leach, 1992). There are traps in conceiving of women's roles in relation to environment in a partial, narrow, or static way of isolating them from men's roles and of assuming a close link between women and nature. According to a World Bank report, women who are trained to manage and maintain community water systems often perform better than men because they are less likely to migrate, more accustomed to voluntary work, and better entrusted to administer funds accordingly. (World Bank 1992: 113).

(UNRISD 1994:3, citing Wolf 1980). Technical solutions for environmental problems were common, but only rarely did such guidelines pose the political questions of who should take the relevant action, how they should do so, who solid bear the cost, how effective

the actions of those agents may be expected to be, and what the response would be of various social groups.

(Leach, Green and Joeke; 1996). Women have often been treated as, in effect, a source of cheap labor, with little consideration as whether the project really served their interests.

(Clinton, 1995). Investing in people especially women and girls is as essential to the prosperity of entire global family as investing in the development of open markets and trade.

Harding (1991) argues that the inclusion of women's "lived experience" into our social calculus is a necessary factor that moves us "toward more democratic societies," that knowledge production controlled by elites produces partial insights, at best, and the resulting social institutions are likewise very limited. (Statham, 2000).

(Hemmati, M. and Gardiner, R., 2000). Women's contribution to environmental management often takes place at the local level. Women in many countries for example Ukraine, Bangladesh, Russia and Mexico, have been evolved in planning the management of fresh water resources. They have come together in women's group and cooperatives to mobilize communities and resources to highlight

urgent problems in industrial “Hot spots”, as well as to help conserve and protect their supplies of clean accessible water.

CHAPTER 3

MATERIALS AND METHODS

3.1 Study Design

To assess an awareness of the attitudes, priorities, opinions and knowledge of local people regarding their environment is the central theme of research methodology for this study. This is mainly based upon the approach that reveals the indigenous knowledge of environment and its gender based difference. It entails recognizing that the local people are not powerless, unknowledgeable, gender neutral and passive people, but are capable to institute the change in environmental management and conservation practices.

This research contains a sharing of common concern with critical feminist, anthropological and participatory approaches to environmental conservation. Usually in seeking the environmental concerns, issues and their impacts, social aspects are ignored.

Kuterha village of District Chakwal was selected as a case study. It was planned to work at community level. Research techniques mainly consisted of:

- Questionnaires
- Personal narratives
- Open ended and semi structured interviews

3.2 Experimental Area

For the present study the “Gender and Environment Linkages in Rural Context....A Case Study Kuterha village of district Chakwal”, baseline information was collected before making surveys of the area. Chakwal is a district in the Punjab province, and was created in 1985. The total area of Chakwal district is 6,609 square kilometers and total population of the district according to 1998 census was 1,083,725. As study aimed to explore the relationship of gender and environment, especially in rural area, so Kuterha village was selected as an area for case study. The village of Kuterha is a small village, comprising of 80 houses and total population of 1130 people.

3.3 Sampling Strategy

Before deciding the sampling strategy, exclusive visits to the area were made. Interviews were conducted by walking and selecting the rural women and men randomly as participants of the study. Although, the study was gender based and mainly focused on the females as both vectors and actors of environmental adversities, yet male participants were also interviewed as gender bias was also meant to be explored in various aspects of natural resource management, distribution and

impacts on females. Sample size taken was hundred (100), out of which sixty (60) were females and forty (40) were males.

3.4 Design of Interview /Questionnaire

Questionnaire for the present study was designed to get a clear and in depth view of local demographic characteristics, topography of the area, waste management, exploitation of natural resources, diseases, water, sanitation ,and their awareness regarding females rights over natural resources. Questions were translated into local language and each questionnaire comprised of 40 questions.

3.5 Data Collection

Data was collected from primary sources by conducting interviews from both male and female peasants of the study area (Kuterha village). Interview schedule was designed in a way that includes all the issues of gender and environment. Secondary data was also collected to facilitate the primary data. Ministry of population and welfare was contacted to get the information regarding population of Kuterha village according to census records. Local Government primary school Kuterha was also visited for knowing the ratio of girl and boy students in the school.

3.6 Data Processing, Summarization and Analysis

For the present study, once the data was collected it was processed and summarized with the help of MS Access (Office 2007), MS Excel software. All the information gathered was classified and tabulated according to the nature of data and analyzed using “Systat Statistical Package”. To see the relationship between environment and gender, chi square test was applied in order to bring the results up to the mark. MS Excel was used to draw charts and graphs and Minitab was used for reliability test.

RESULTS AND DISCUSSIONS

4.1 Socio-Economic and Demographic Conditions of Respondents

Information about age, gender, education, marital status and occupation of all respondents has been described in the form of Chi square charts below.

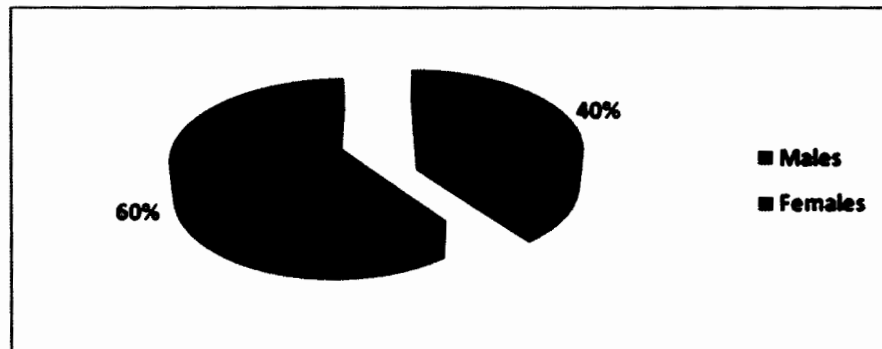


Figure 4.1.1 Distribution of respondents according to gender

As study was mainly gender based, so out of total hundred (100) participants of study sixty (60) were females and forty (40) were males. The total number of respondents was hundred (100); therefore this distribution sixty (60) and forty (40) is described as 60% and 40% in the chart.

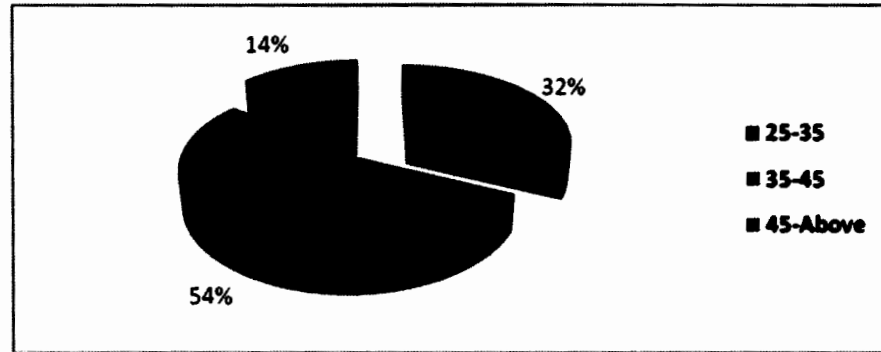


Figure 4.1.2 Distribution of respondents according to age

Figure 4.1.2 shows that there were thirty two percent (32%) respondents whose age was between 25-35 years and fifty four percent (54%) people were of the age of 35-45 years. Only fourteen percent (14%) respondents were there whose age was forty five (45) and above.

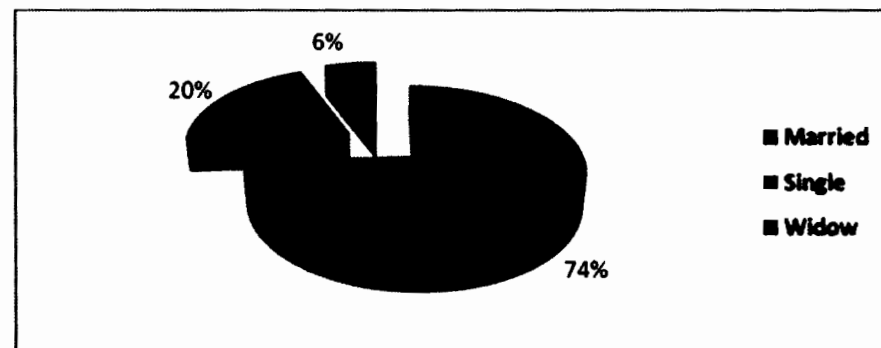


Figure 4.1.3 Distribution of respondents according to marital status

According to Figure 4.1.3, there were seventy four percent (74%) respondents who were married and out of married respondents sixty percent (60%) were women as previously described. So fifty two percent (52%) married respondents were women and five percent (5%) were widows who were found acting as the main supporters of their

families. There were twenty percent (20%) single respondents who were single.

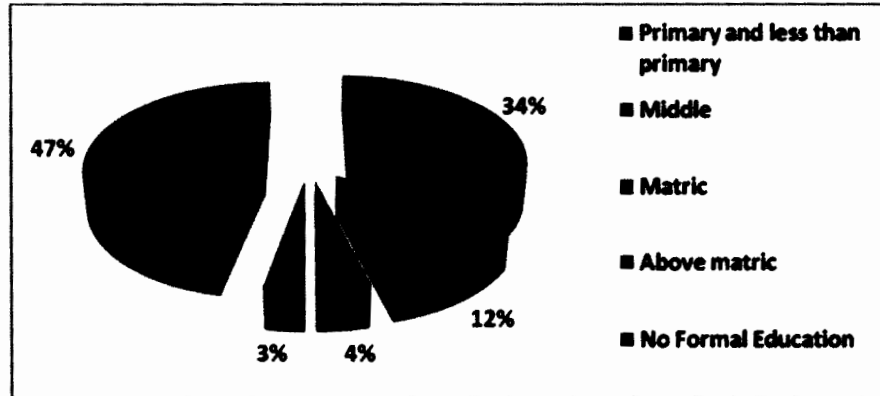


Figure 4.1.4 Distribution of respondents according to education

Figure 4.1.4 shows that thirty four percent (34%) respondents were having education up to primary level or had less than primary education and twelve percent (12%) respondents had middle school level education. Only four percent (4%) and three percent (3%) respondents were having matriculation and above matriculation level education, respectively. There were forty seven percent (47%) respondents who had received no formal education at all.

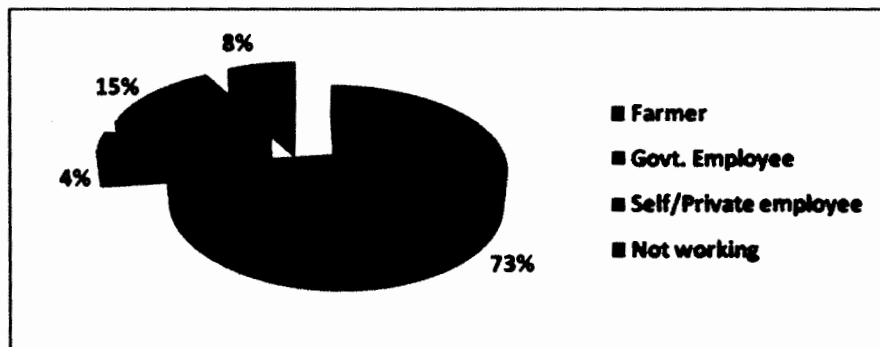
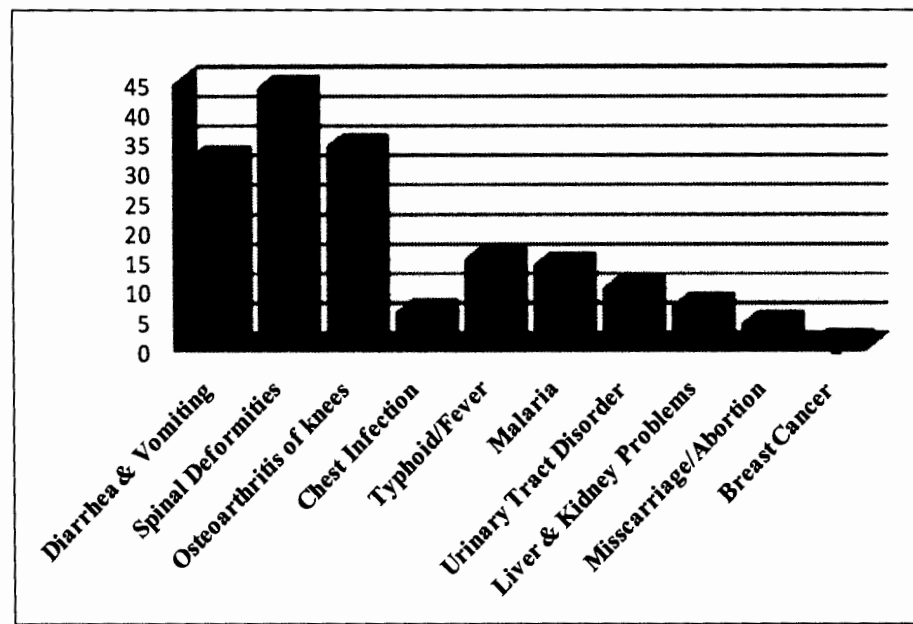


Figure 4.1.5 Distribution of respondents according to age

Figure 4.1.5 demonstrates that main occupation of the people of village Kuterha was agriculture and farming. There were seventy three percent (73%) respondents who were farmers and agriculture was their main occupation. Respondents who were government employee were four percent (4%) and fifteen percent (15%) were engaged with private or self business. There were eight percent (8%) respondents who were found unemployed.



F

Figure No. 4.1.6 Distribution of female respondents according to diseases

Figure 4.1.6 shows the prevalence of various diseases among women of the study area Village Kuterha of District Chakwal. Options in the questionnaire included the diseases which are caused by environmental exposure. There were thirty two thirty two (32) women who were suffering from diarrhea and vomiting, forty four (44) women were

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patients of spinal deformities and it was the disease having highest prevalence ratio among the women of village Kuterha. Main reason found for this disease was long distance travelling in search of water and fuel wood, and then travelling back to their homes carrying heavy burdens with them. Osteoarthritis of knees was the complaint of thirty four (34) women; as they were suffering from this disorder also due to same reason i.e. long distance travelling carrying heavy burdens. Chest infection was found in six (6) women and fifteen (15) were suffering from Typhoid/Fever. There was a single woman who was suffering from breast cancer. As there is a close association between breast cancer and use of DDT and its derivatives and even by knowing the harmfulness of this insecticide, it was found to be still in use. There were four (4) women who answered that they had miscarriages and seven (7) were suffering from liver and kidney diseases.

4.2 Information gathered from Questionnaires and interviews

Through random walks in the area, people of the village were interviewed and their views regarding role of gender in natural resource management and impacts of environmental adversities on women were interpreted to form a comprehensive overview of the whole study. The results described below are the frequencies of all questions that were asked from hundred (100) people selected as sample of the study out of the whole population of the village.

Total number of respondents: 100

Number of female respondents: 60

Number of male respondents:40

Question No.1

How do you perceive the environment?

Table 4.2.1

Options	Number of responses
An asset to be conserved	20
A commodity to be used	65
God's precious gift to be admired	15

Results of table 4.2.1 show that most of the people were unaware of the importance of their natural environment. Only twenty (20) respondents out of hundred (100) think that environment is an asset and should be conserved. Whereas, sixty five (65) respondents answered that it is only a commodity that is to be used. Also very few people were aware of the aesthetic value of environment, therefore only fifteen (15) respondents considered the environment's aesthetic value. Same results have also been shown with the help of chi square chart below.

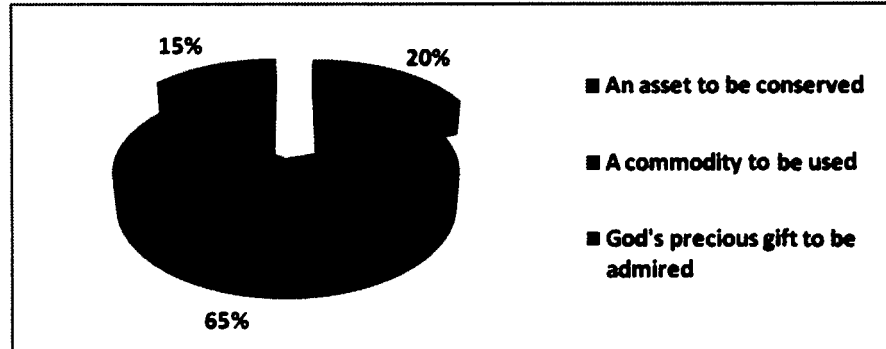


Figure 4.2.1 An Illustration regarding perceptions of people about environment.

Question No.2

Do you think that women in your area have enough rights over natural resources like land, water and forest wood?

Table 4.2.2

Options	Number of respondents
Yes	2
No	81
Don't Know	17

Results of table 4.2.2 show that women were not given their due rights over natural resources and most of the people were aware of this deprivation of women. Out of hundred (100) participants, eighty one percent (81%) answered that females don't have any right over land, water resources or forest wood. Seventeen percent (17%) of people were even unaware of the phenomenon of existence of women rights. Only two (2) people were of the view that women were somehow

given rights over natural resources. Chi square chart in figure 4.2.2 is also illustrating the same results.

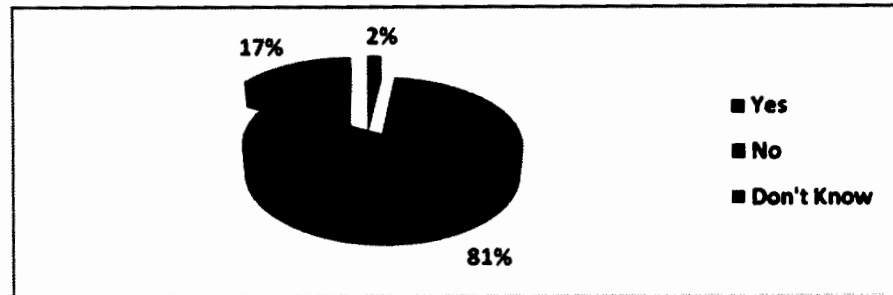


Figure 4.2.2 An Illustration regarding awareness of women rights over natural resources.

Question No.3

If females are given the chance to participate in decision making process of natural resource management?

Table 4.2.3

Options	No. of respondents
Yes	7
No	59
To some extent	34

Females were not given enough opportunities to participate in decision making process for the management of natural resources, as fifty nine (59) people answered “No” in this regard. The results are shown in table 4.2.3. Reasons for low female participation were found to be discrimination and underestimation of their management abilities and skills. There were thirty four (34) respondents who thought that women were given the chance in the decision making process for

natural resource management to some extent and only seven (7) people answered “Yes” and were of the view that women were given equal chances to participate in decision making process. Figure 4.2.3 illustrates the same results in the graphical form.

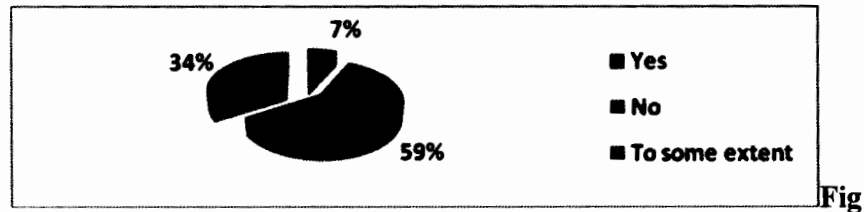


Figure 4.2.3 An Illustration regarding role of women in natural resource management.

Question No.4

Do women use natural resources to generate money?

Table 4.2.4

Options	No of Respondents
Yes	17
No	70
Sometimes	13

As women were not given their due rights over natural resources and their use, so they can not generate money by the use of these resources. Although women were found to be used as cheap labour in most of agricultural and field related activities, but even then they were deprived of their proper share in the out put of their hard work. The results have been shown in table 4.2.4.

The same results are also shown in the following figure.

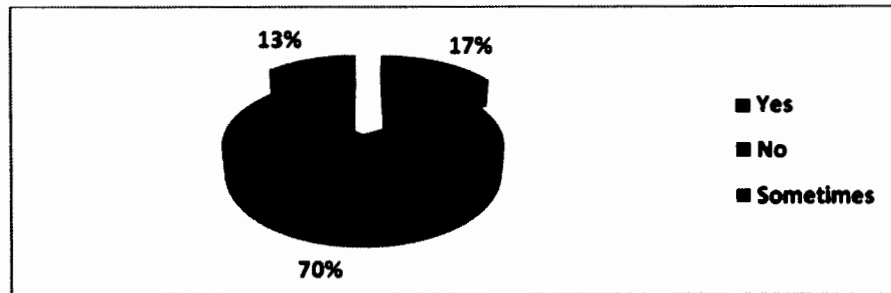


Figure 4.2.4 An illustration regarding unequal share of women in the output of natural resource use.

Question No.5

Are women legally and traditionally recognized as managers of natural resources?

Table 4.2.5

Options	Respondents
Yes	2
No	24
Don't Know	74

Results of table 4.2.5 show that majority of people i.e. seventy four percent (74%) were unaware of women's role as natural resource managers. Only two percent (2%) respondents said "Yes" for this and 24% participants said "No". It means that a very small proportion of local population is aware of the concept that women can traditionally and legally manage the natural resources. Results have also been plotted in the figure 4.2.5.

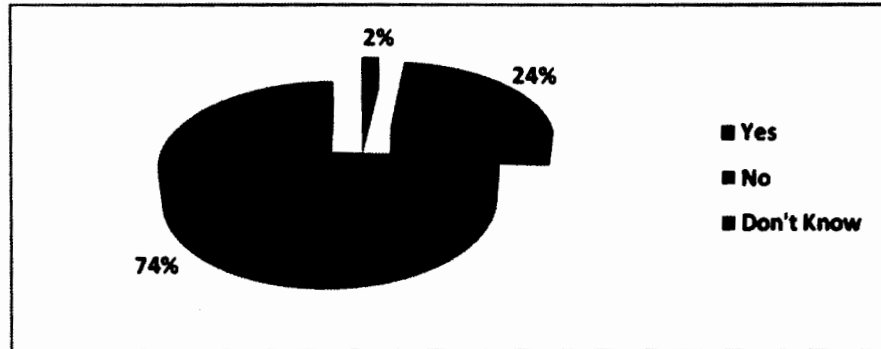


Figure 4.2.5 An illustration regarding women's role as natural resource managers

Question No.6

If females have the right to decide about family size?

Table 4.2.6

Options	No. of responses
Yes	17
No	83

The ratio of the responses regarding female's right to decide about family size shown in the table 4.2.6, shows that women were not given an opportunity to decide about the number of children. Main reasons were low literacy rate in both males and females and women's unawareness of their rights. Also lack of awareness of modern family planning methods and certain religious issues were found to deprive the women of their important right to decide about number of children.

Figure 4.2.6 exhibits the same ratio in graphical form.

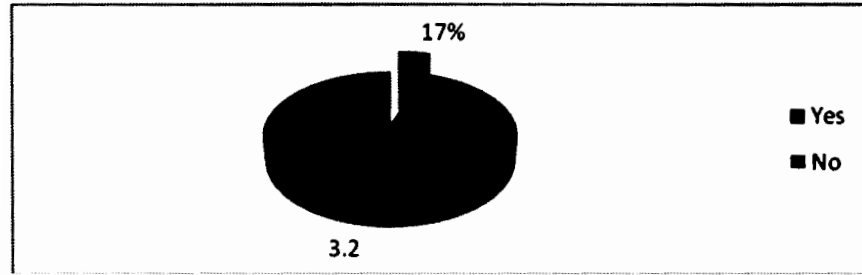


Figure 4.2.6 An illustration regarding women's right to decide about family size.

Question No. 7

On average how many children are born by a woman?

Table 4.2.7

Options	No of Responses
5	18
Less than 5	16
More than 5	66

Results in table 4.2.7 are revealing that sixty six percent (66%) respondents answered that on average more than five children were born per woman in the village of Kuterha. There were only sixteen (16) responses for less than five children per woman. Whereas eighteen (18) respondents were of the view that almost five (5) children were born by a woman. Inequality of the response ratio is clear and enough for showing high population growth, irrespective of

per capita income and resources to bring up the next prosperity. Their main concern seemed to increase the manpower, so that more hands would be available to earn. Figure 4.2.7 exhibits the same results in graphical form.

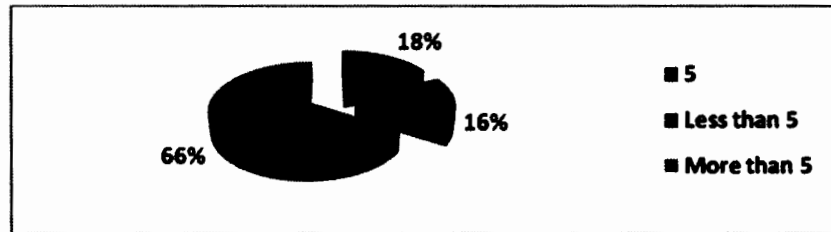


Figure 4.2.7 An illustration regarding average number of children born by a woman.

Question No.8

At what age girls usually get married in your village?

Table 4.2.8

Options	No. of responses
12-17 years	13
18-25 years	58
More than 25 years	29

Results of table 4.2.8 show that usually girls get married in mature age. There was not a trend of early or childhood marriages in the study area. Young girls looked after home when their parents were in fields or at work. Sometimes girls also go to fields for crop harvesting and participate in other agricultural practices, but mostly they stayed at

home. These findings are also demonstrated in the graphical form in the figure 4.2.8.

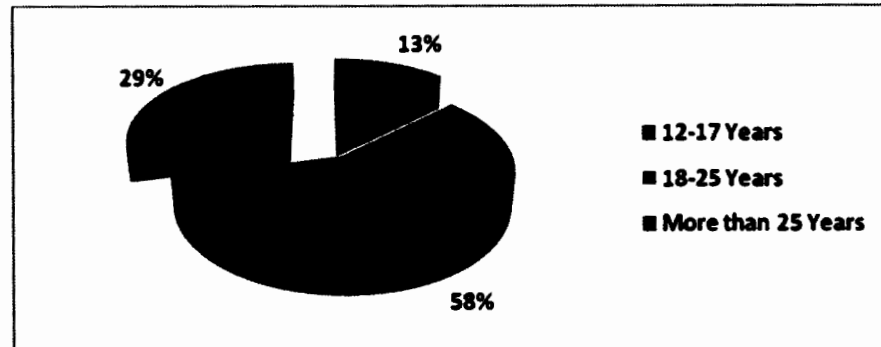


Figure 4.2.8 An illustration regarding age of girls at which they get married.

Question No. 9

Who is the major hewer of fuel wood?

Table 4.2.9

Options	No of responses
Men	88
Women	12

According to the data presented in table 4.2.9, men were found to be the major hewers of fuel wood. They cut down the trees in order to fulfill their requirements of fuel. Women also do the same task when male members of the family were not available or unable to cut the wood.

In chi square graph of figure 4.2.9 this result has also been presented.

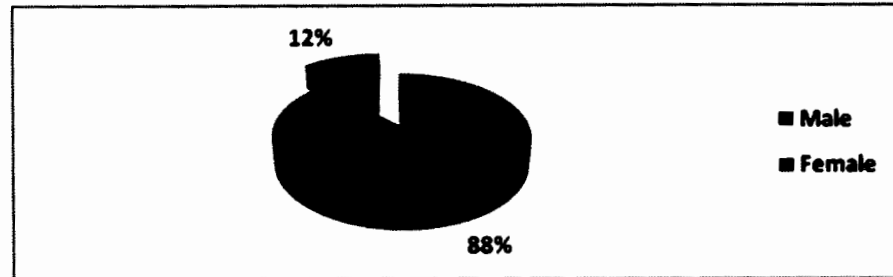


Figure 4.2.9 An illustration regarding distributions of males and females as hewers of fuel wood.

Question No. 10

Who is mainly responsible for collecting fuel wood?

Table 4.2.10

Options	No. of responses
Men	25
Women	75

Table 4.2.10 shows the results that although men were found as major hewers of fuel wood but women were mainly responsible for collecting the wood. They have to travel very long distances to collect fuel wood, due to which they often suffered from spinal deformities and osteoarthritis of knees. Same results have also been shown in the figure 4.2.10.

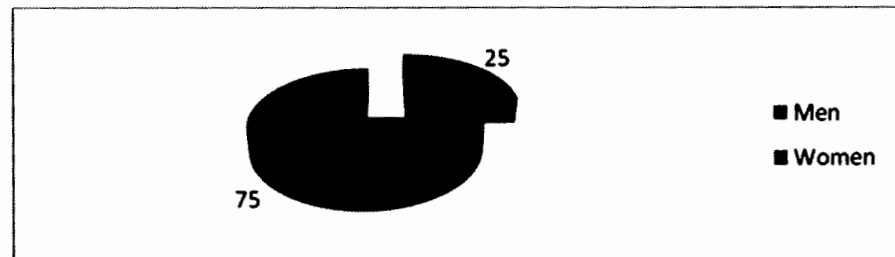


Figure 4.2.10 Distribution of respondents according to their role in collecting fuel wood

Question No. 11

How many hours/day women, in your area spend in fields?

Table 4.2.11

Options	No. of responses
More than 6 hours	85
Less than six hours	15

The results in the table 4.11 show that a major part of the day of a female was spent in the fields. This shows that women have to do extra work besides performing their daily home chores. They work in their own fields or either hired on wages at the others fields. Cattle were another responsibility of women. In crop harvesting season, women were overburdened with additional responsibilities. Long working hours in fields also deprived their children of their necessary attention and care.

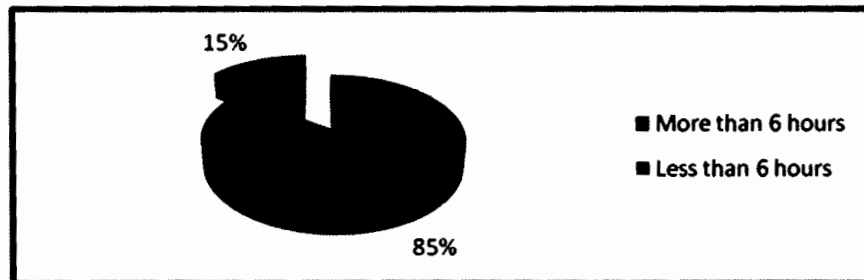


Figure 4.2.11 An illustration regarding women working hours in fields.

Question No.12

Who mostly acts as the care taker of the family?

Table 4.2.12

Options	No. of responses
Men	0
Women	100

All the respondents answered for this question that it's the women who act as the care takers of families. This role of women includes all matters pertaining to the maintenance of home, daily home chores like cooking, cleaning house, fetching water for drinking and other purposes, washing clothes, taking care of domestic hygiene, children and elderly members of the family.

Question No.13

Approximately how much distance women travel daily to collect fuel wood and water?

Table 4.2.13

Options	No. of responses
Almost 4KM	62
Less than 4KM	7
More than 4KM	31

Results in the table 4.2.13 show that sixty two (62) respondents out of hundred (100) answered that women have to travel almost 4 kilometers daily to collect and bring fuel wood and water for home.

There were seven (7) respondents who said that women travel daily a distance of less than 4 kilometer for fuel wood and water. On the other hand thirty one (31) respondents were of the view that women have to travel more than 4 kilometers daily. An important thing was noted that, as the village topography was sloppy/mountainous and there was not even a single road in the village for the traveling of the people, so traveling through that sloppy and stony way to the village, especially for the women was a troublesome job while they were carrying some burden like water or firewood.

Same results have also been shown in the following figure.

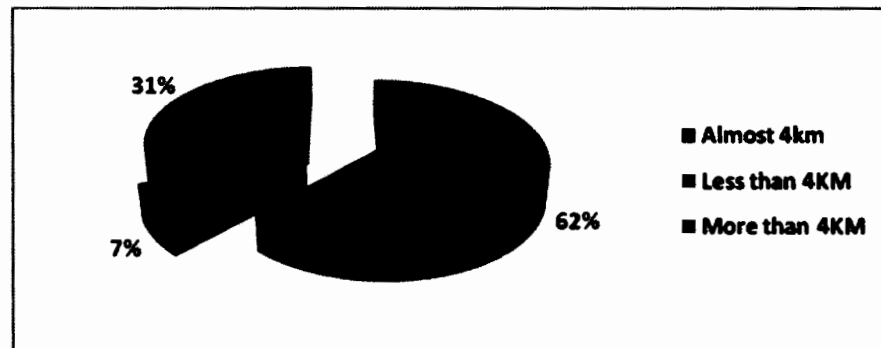


Figure 4.2.12 An illustration regarding distance travelled by women daily to collect water and fuel wood.

Question No.14

Due to long distance travelling for collecting fuel wood or water, if women suffered from any disease?

Table 4.4.14

Options	No. of responses
Yes	78
No	22

Question No.15

If yes, what disease they were suffering from out of these?

Table 4.2.15

Options	No. of Responses
Spinal Deformities	44
Osteoarthritis of Knees	34

According to Table 4.2.14, seventy eight (78) respondents said “Yes” for women having diseases due to long distance travelling. There were twenty two (22) respondents, who responded that they don’t know any woman having any disorders because of long distance travelling. Out of those seventy eight (78) respondents forty four (44) gave the views that women they knew were suffering from spinal deformities and thirty four (34) were aware of the presence of Osteoarthritis of knees among women due to long distance travelling. Out of sixty (60)

female respondents fifty five (54) themselves were suffering from either of these diseases.

Results of table 4.2.15 have also been demonstrated in graphical form in figure 4.2.13.

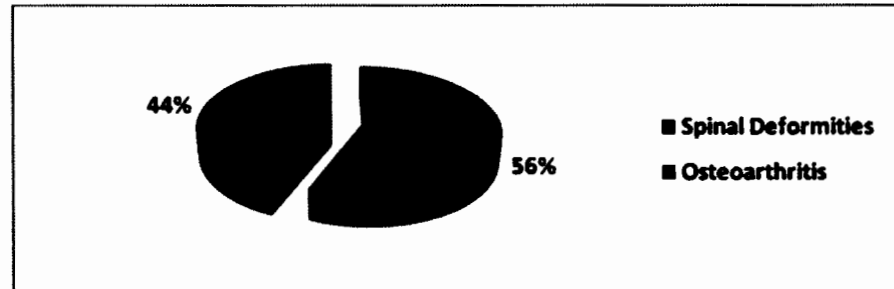


Figure 4.2.13 An illustration regarding distribution of diseases among women due to long distance traveling.

Question No.16

Who makes the decision about the selection of fuel wood for house hold?

Table 4.2.16

Options	No. of responses
Male	84
Female	16

As females were not found to be given any chance in decision making process for the most of household affairs, so here again females were deprived of this right. According to the results of table 4.2.16, it was the male who mainly decides that what fuel should be used for house

hold. Although woman was the main user of fuel and her traditional knowledge was more reliable about the fuel used, but she has to rely on the type of fuel she was provided by man. Poverty was another possible reason which prevents them to use more environment friendly fuels for households.

Same results have also been shown in the figure 4.2.14.

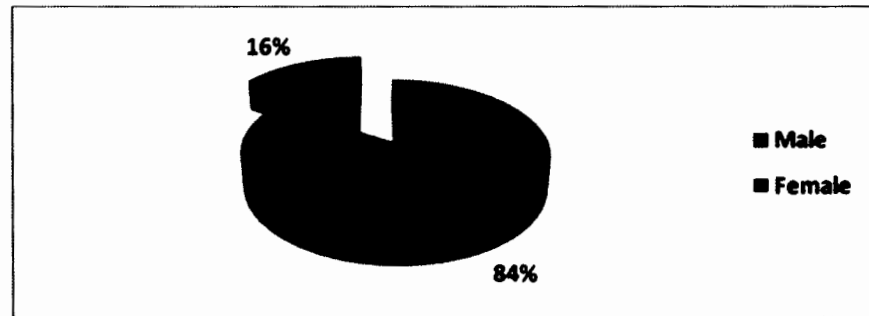


Figure 4.2.14 Distribution of respondents according to their role in selecting fuel for household.

Question No.17

Which fuel do you mostly use for cooking?

Table 4.2.17

Options	No. of responses
Agricultural residues	11
Animal Dung	21
Forest Wood	40
Straw	9
Coal	19

Results of table 4.2.17 show that people of Kuterha village mostly used wood and animal dung as fuel for household. Very few people i.e. only nine percent (9%) were found using straw and only eleven percent (11%) was found using agricultural residues. Figure 4.2.15 shows these results in graphical form.

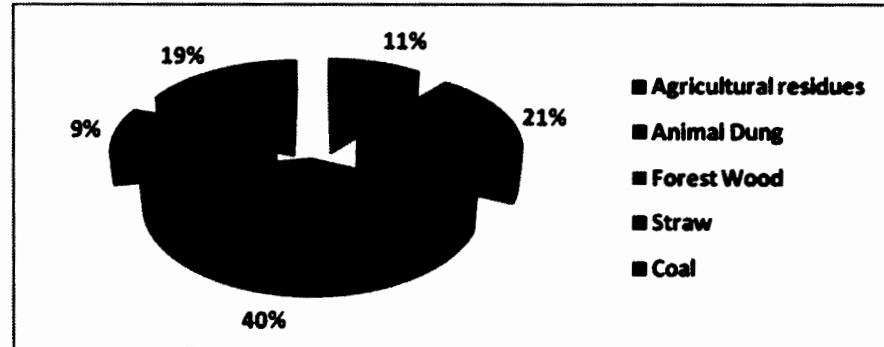


Figure 4.2.15 Distribution respondents according to fuel used by them.

Question No.18

Where females mostly do the cooking in your area?

Table 4.2.18

Options	No. of Responses
Inside The Kitchen	31
In open air	69

Results of the table 4.2.18 exhibit that mostly cooking is done outside the kitchen in open air, as sixty nine percent (69%) respondents answered so. This is important for female health as it can save them

from many respiratory diseases. Whereas thirty one percent (31%) respondents answered that females cook inside the buildings.

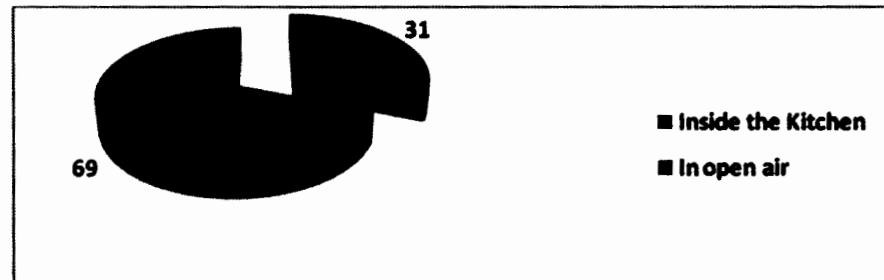


Figure 4.2.16 An illustration regarding trend of cooking in open air.

Question No.19

Have you ever suffered from any respiratory Infection?

Table 4.2.19

Options	No. of responses
Yes	25
No	75

There were twenty five (25) respondents who said that they suffered from and some were still suffering from respiratory infections. Coughing and sneezing were more common among females, especially those who said they mostly cook inside the buildings.

Question N0.20

Do women have extra time for tree planting and house gardening, besides performing their daily home chores?

Table 4.2.20

Options	No. of Responses
Yes	9
No	78
Occasionally	13

This question was asked to assess the interest of women in gardening and tree planting. But results were very disappointing as women responded that they didn't have extra time for these tasks. They remained busy in other daily chores and field work throughout the day and even could not pay enough attention to their children.

Same results have also been shown in the figure 4.2.17.

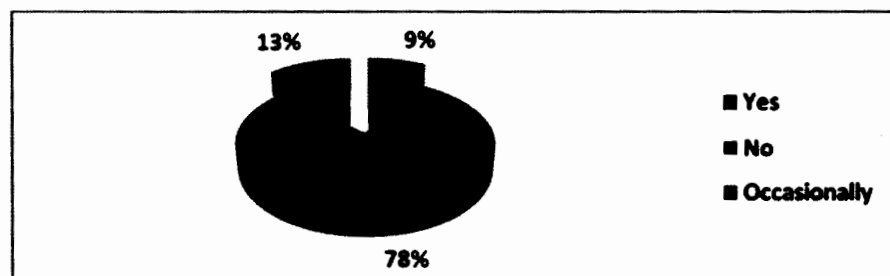


Figure 4.2.17 An illustration regarding women's interest and opportunities in household gardening.

Question No.21

Do you have indoor plants in your house?

Table 4.2.21

Options	No. of Responses
Yes	24
No	76

During the visit of village most of the houses didn't have indoor plants.

However, small trees were grown in the houses for the purpose of shade. People also showed very little interest in growing indoor plants.

It is obvious from the results of table 4.2.21, which show that there were twenty four (24) respondents only, who said that they had indoor plants in their houses.

Figure 4.2.18 shows the same results in graphical form.

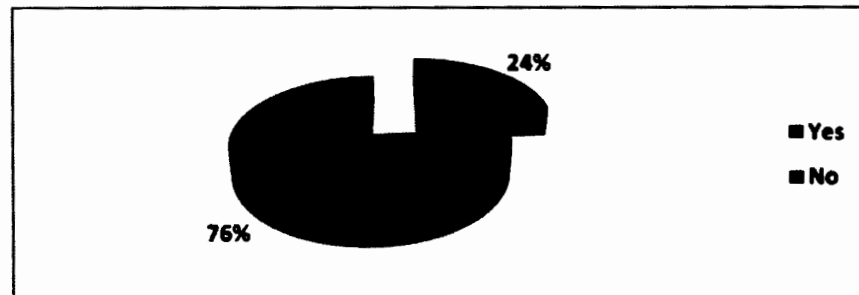


Figure 4.2.18 An illustration regarding distribution of respondents according having to indoor plants.

Question No.22

Which plant/tree species are you more interested to grow?

Table 4.2.22

Options	No. of Responses
Fuel Wood	87
Building Wood	13

There were eighty seven percent (87%) respondents who showed their interest in growing plants/trees for fuel wood instead of wood used for construction purposes. Table 4.22.2 exhibits a clear difference between the choices of people. Figure 4.2.19 shows the same results.

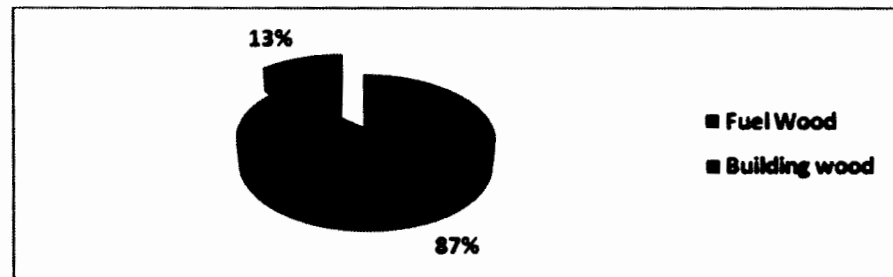


Figure 4.2.19 An illustration regarding interest of respondents in growing different plant species.

Question No.4.23

How many plants/trees have you planted within last six months?

Table 4.2.23

Options	No. of Responses
Less than five	55
More than five	20
None	25

According to the results of table 4.2.23, fifty five percent (55%) respondents answered that they planted less than five (5) plants within last six months, whereas there were twenty percent (20%) respondents who said that they have had planted more than five plants and twenty five (25%) respondents said that they had not planted any plant within last six months. Among those respondents who answered yes for planting more than or less than five plants, thirty eight (38) were women.

These results have also been shown in the figure 4.2.20

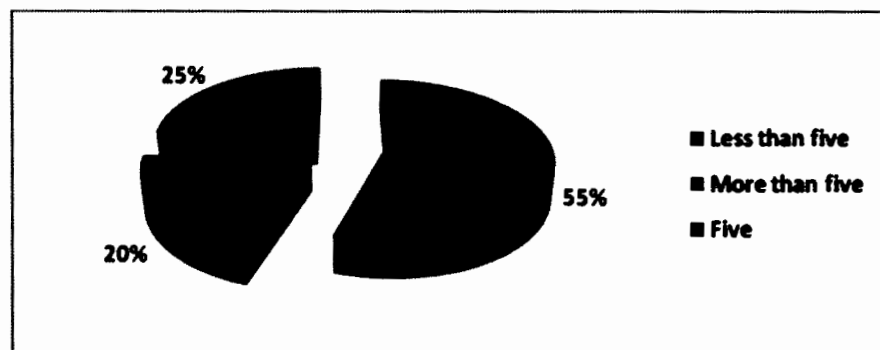


Figure 4.2.20 Distribution of respondents according to the number of plants they planted within last six months.

Question No.24

Who sells animal/dairy products (milk, butter, meat, eggs)?

Table 4.2.24

Options	No. of Responses
Males	22
Females	78

According to the results of table 4.2.24, twenty two percent (22%) respondents said that it is the men who sell animal and dairy products while there were seventy eight (78%) responses for considering women as the major sellers of animal and dairy products. According to the narratives of local people, as for as livestock products like meat, milk etc is considered males were main sellers but women mostly sell dairy products.

Figure No.4.2.21 is also illustrating these results.

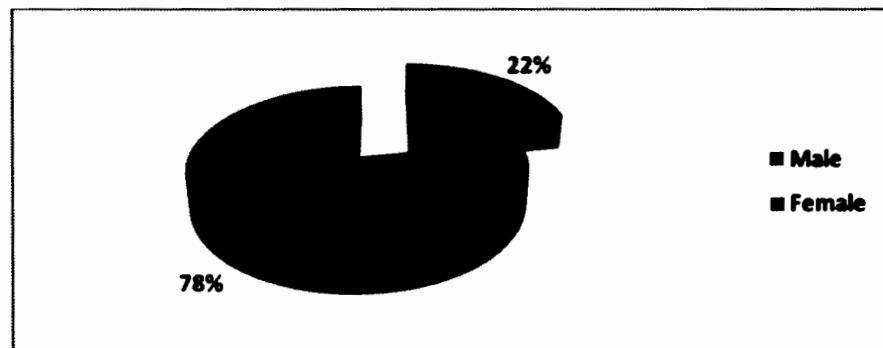


Figure 4.2.21 Distribution of respondents according to their role in the sale of animal/dairy products.

Question No.25

Do you allow girls for going to schools along with boys?

Table 4.2.25

Options	No. of Responses
Yes	96
No	4

Results of table 4.2.25 show that majority of people were in the favor of the education of girls as ninety six percent (96%) respondents answered that they liked to educate their daughters. There was awareness for education but they didn't have enough facilities to educate their children. There was only a primary school in the village, and after primary education very few children can proceed with their education. Especially girls remained deprived of middle and secondary level education due to lack of education facilities.

Same results have also been shown in graphical form in figure 4.2.22.

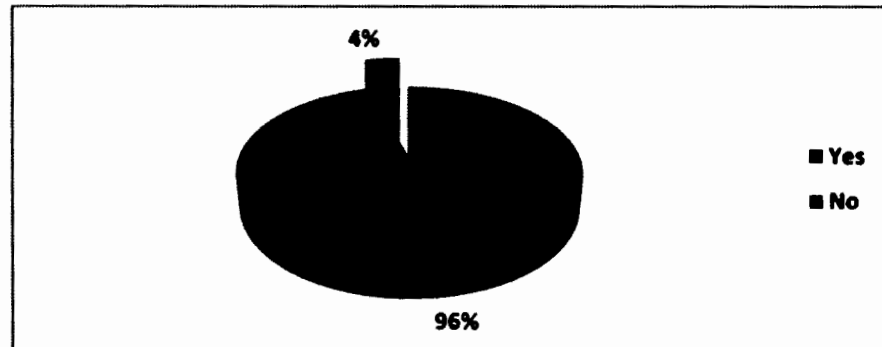


Figure 4.2.22 Distribution of respondents according to their interest in the education of girls.

Question No. 26

Are women allowed to make decisions regarding crop sale?

Table 4.2.26

Option	No. of Responses
Yes	02
No	98

Although women were found working shoulder by shoulder in fields with men and take part in all agricultural activities from seed sowing to crop harvesting, but they were deprived of their right to contribute in making any decision for crop sale. This decision was 100% male originated and only males had the authority to make the decision that at what price, at what time and in which market crop should be sold. Table 4.2.26 shows the results, where ninety eight percent (98%) respondents answered that woman didn't have to do anything regarding decisions about crop sale.

The results have also been shown in the figure 4.2.23.

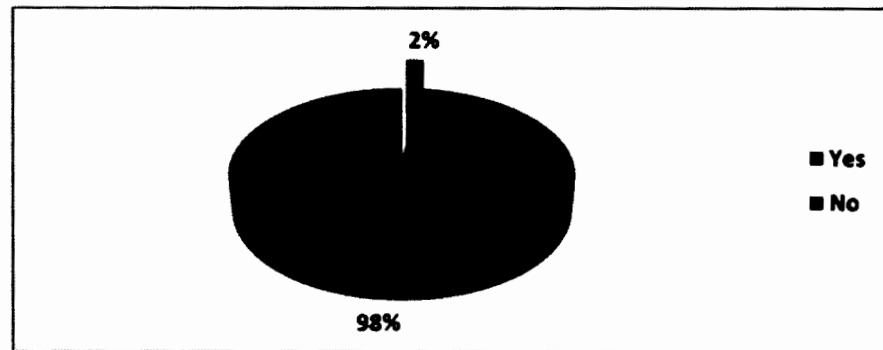


Figure 4.2.23 An illustration regarding role of women in decision making process for crop sale.

Question No. 27

As a female farmer, what fertilizer is easily available and affordable for you?

Table 4.2.27

Options	No. of Responses
Animal Manure	11
Plant Manure	8
Compost	32
Commercial Fertilizer	9

This question was asked only from female respondents. There were sixty (60) female respondents, out of which, according to the results of table 4.2.27, eleven (11) answered that they preferred animal manure, eight (8) were in the favor of plant manure and thirty two (32) respondents said that compost is the best choice as it is more helpful in nourishing soil and is easily available. There were nine (9) respondents who preferred commercial fertilizer.

Same results are shown in the following figure 4.2.24.

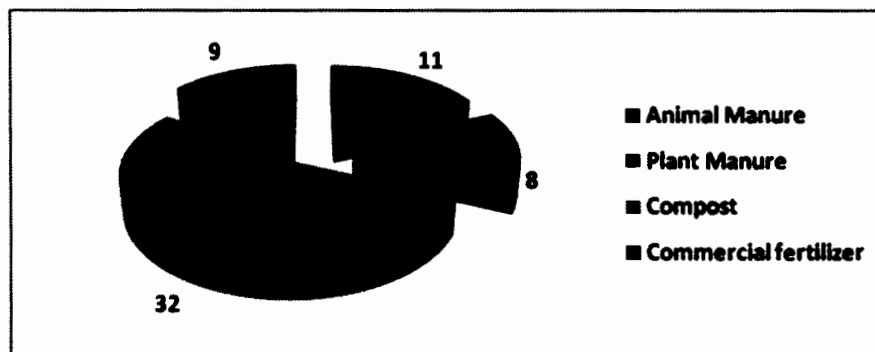


Figure 4.2.24 Distribution of female farmers according to their preference for fertilizer.

Question No. 28

Where do you store cereals and grains?

Table 4.2.28

Options	No. of Responses
Granaries	87
Simple sacks	13

Results of table 4.2.28 show that eighty seven percent (87%) people store grain and cereals in granaries, because it is safe to protect food from mice/rats and other pests.

Question No.29

Where do you dispose off your household waste?

Table 4.2.29

Options	Responses
Landfill	0
Streets	27
Wells	15
Vacant Fields	58

Fifty eight percent (58%) respondents' response was that they threw the garbage in vacant fields adjacent to their houses. There were fifteen percent (15%) respondents who said that they dumped the waste in wells, whereas twenty seven percent (27%) respondents answered that they dumped the waste in streets. There was not any landfill in the area. Same results have also been shown in the figure 4.2.25.

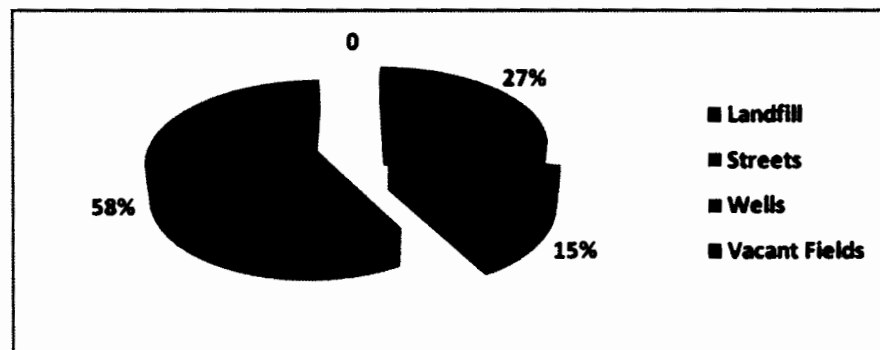


Figure 4.2.25 Distribution of respondents according to their choice of waste dumping sites.

Question No.30

Do you segregate solid waste before disposing it off?

Table 4.2.30

Options	No. of Responses
Yes	18
No	82

Only eighteen percent (18%) responses were in the favor of segregating solid waste before disposing it off. Whereas eighty two percent (82%) respondents answered that they disposed off waste without segregating.

Figure 4.2.26 shows the same results in graphical form.

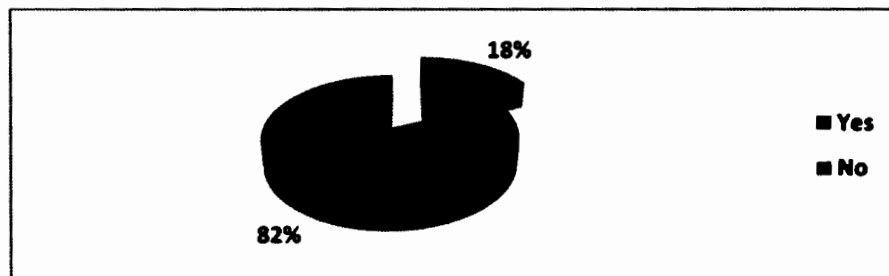


Figure 4.2.26 An illustration regarding awareness of respondents regarding solid waste segregation before dumping.

Question No.31

Which category of household waste is considered as hazardous?

Table 4.2.31

Options	No. of Responses
Glass	30
Batteries	07
Spoiled food	13
Plastic Packaging	14
Don't Know	36

Results of table 4.2.31 show that thirty percent (30%) respondents considered glass as hazardous waste and seven percent (7%) responses were for batteries. Spoiled food was considered hazardous by thirteen percent (13%) respondents and fourteen percent (14%) respondents thought that plastic packaging was hazardous. There were thirty six percent (36%) responses that revealed the ignorance regarding hazardous or non hazardous waste. Figure 4.2.27 illustrates these facts in graphical form.

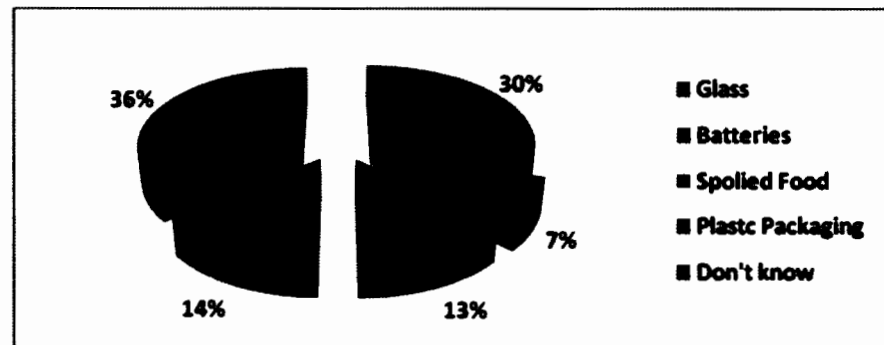


Figure 4.2.27 An illustration regarding awareness of respondents about hazardous waste.

Question No.32

Do you believe that garbage can cause diseases in humans?

Table 4.2.32

Options	No. of Responses
Yes	73
No	18
Don't know	9

Table 4.2.31 shows that seventy three percent (73%) respondents were aware of the fact that waste can create diseases and certain allergies in humans and only eighteen percent (18%) people were ignorant of the fact. There were nine percent (9%) people who said that they never thought about it, so they didn't know. Although people's awareness level was much better but even then they dumped waste in streets and vacant fields, because they didn't have better options to get rid of the waste.

Results have also been shown in figure 4.2.28.

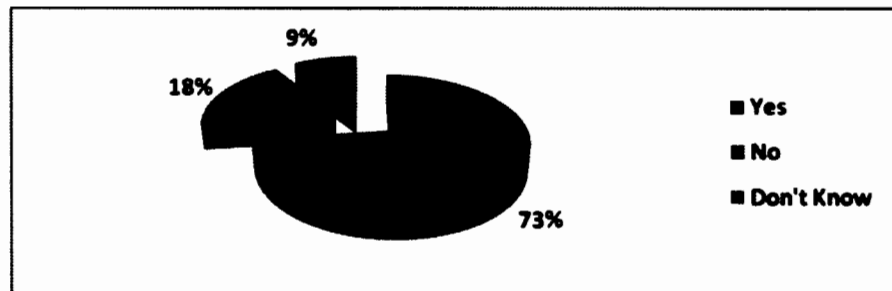


Figure 4.2.28 Distribution of respondents according to their awareness about garbage as a source for creating diseases.

Question No.33

Do you know that pesticides are dangerous for human health?

Table 4.2.33

Options	No. of Responses
Yes	23
No	77

Results of table 4.2.33 show that general awareness level of people about the harmful effects of pesticides on human health was very low. Out of hundred (100) respondents there were twenty three (23) respondents who said that they were aware of the harmfulness of pesticides and seventy seven (77) respondents were ignorant of the fact. Same results have also been shown in the figure 4.2.29.

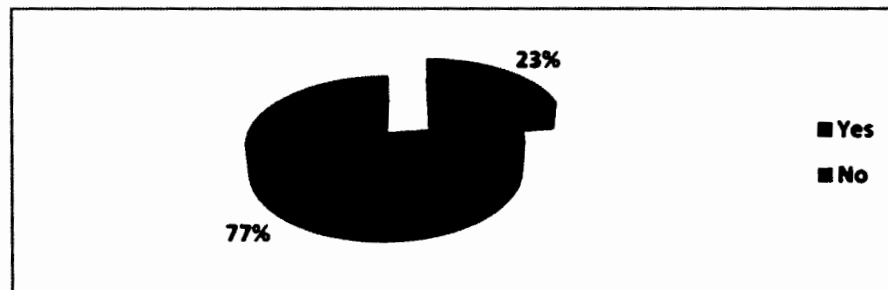


Figure 4.2.29 Distribution of respondents according to their awareness level about insecticide/pesticide hazards.

Question No. 34

Do you use DDT or DDE insecticides?

Table 4.2.34

Options	No. of Responses
Yes	34
No	66

Results of table 4.2.34 show that though there was awareness among people about the harmfulness of DDT and its derivatives yet even then thirty four percent (34%) respondents answered that they were still using these insecticides. As these insecticides have some association with breast cancer, so universally their use is being banned. In the study area Kuterha village district Chakwal, there was one female, thirty four (34) years of age who was suffering from breast cancer.

Figure 4.2.30 shows the same results graphically.

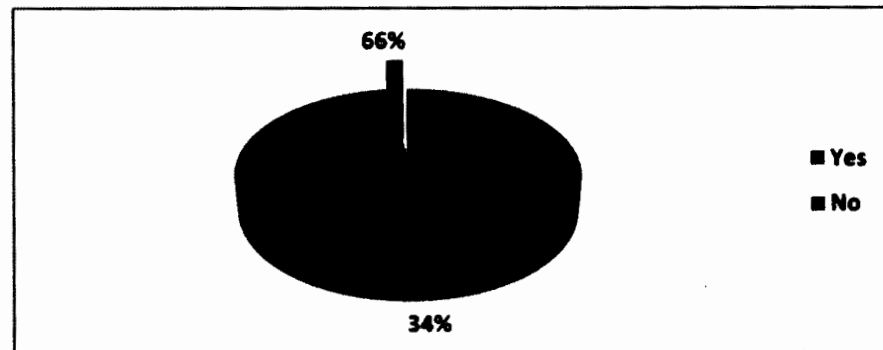


Figure 4.2.30 An illustration regarding prevalence of DDT & DDE use.

Question No.35

These insecticides have adverse impacts on.....?

Table 4.2.35

Options	No. of Responses
Newly Born Babies	07
Pregnant Women	04
Both	30
Don't know	59

Results of table 4.2.35 show that fifty nine percent (59%) respondents were unaware of the fact that DDT or DDE may affect human health, especially newly born babies and pregnant women because they were more vulnerable. Only thirty percent (30%) respondents showed positive response, whereas seven percent (7%) respondents said that these insecticides may affect newly born babies and four percent (4%) said this about pregnant women. Same results have also been shown in the figure 4.2.31.

S

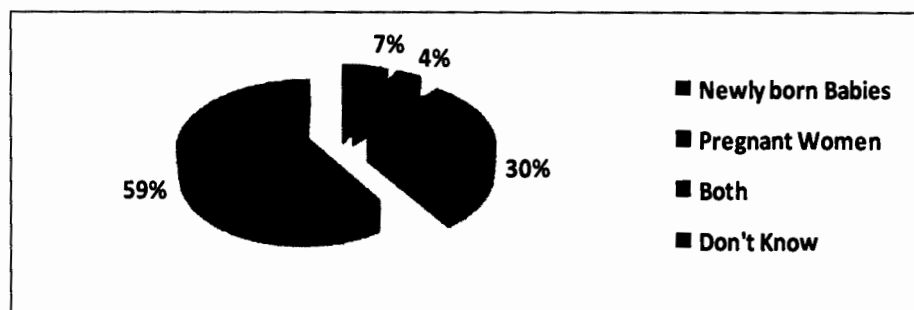


Figure 4.2.31 Distribution of respondents according to their awareness regarding harmful effects of DDT & DDE.

Question No.36

Are women hired on wages for agricultural practices?

Table 4.2.36

Options	No. of Responses
Yes	53
No	47

Question No.37

If Yes, then are women's wages

Table 4.2.37

Options	No. of Responses
Equal to men's wages	03
Less than men's wages	50
More than men's wages	0

Results shown in table 4.2.36 and 4.2.37 are about female discrimination in the terms of wages of their labor in fields. Although they spent equal time and energy in fields but, comparatively, their wages were less than men. Out of fifty three percent (53%) respondents who said that women labour is hired on wages, fifty percent (50%) answered that wages paid to women were less than man. Figure 4.2.32 is showing the same results in graphical forms.

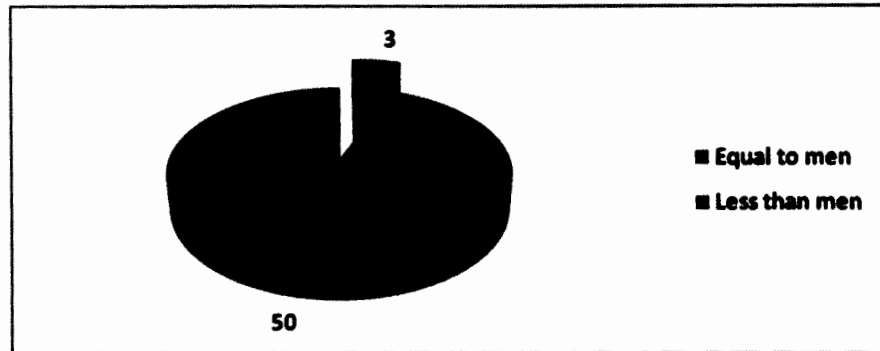


Figure 4.2.32 An illustration regarding discrimination between male and female peasants in terms of wages.

Question No.38

From which drinking water source, do you get water?

Table 4.2.38

Options	No. of Responses
Hand Pump/Boring	44
Unprotected well	56
Piped water supply	0

There was no proper system of piped water supply in the village and mostly people fetched water from unprotected wells which were supposed to be contaminated and caused many water born diseases, but people didn't care much about that. Forty four percent (44%) respondents got water from hand pumps. In the past women used to fetch water from distant areas but now a days, there were found many hand pumps available in the village.

Figure 4.2.33 shows the same results in graphical form.

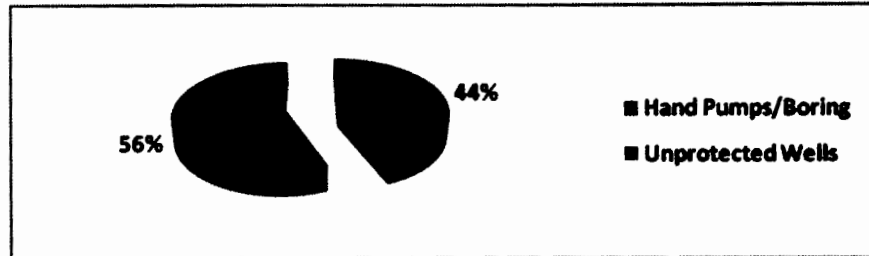


Figure 4.2.33 Distribution of respondents according to drinking water sources.

Question No.39

Do you boil water before drinking?

Table 4.2.39

Options	No. of Responses
Yes	12
No	88

There was not found any trend of treating drinking water, as females didn't have enough time for this job. Secondly they didn't have enough awareness that boiling the water before drinking could save them and their family from many water born diseases.

Same results have been shown in figure 4.2.34.

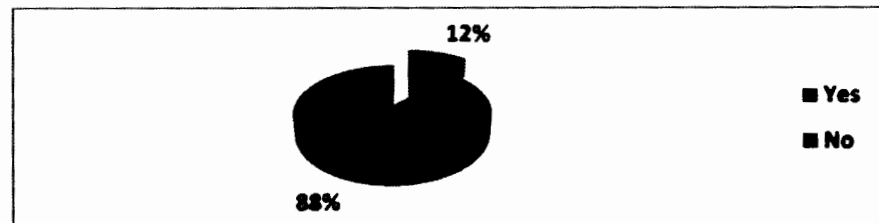


Figure 4.2.34 Distribution of respondents according to the practice of boiling water before drinking.

Question No.40

Which diseases are caused by polluted water in your opinion?

Table 4.2.40

Options	No. of Responses
Malaria	46
Diarrhea	12
Respiratory Diseases	01
Typhoid	15
Skin diseases	03
Flue	23

Results of table 4.2.40 show that very few people were aware of water born diseases. As forty six percent (46%) respondents answered that malaria is caused by polluted water and twenty three percent (23%) respondents said that flue is caused by polluted water. There were three percent (3%) respondents who said that skin diseases are caused by polluted water and fifteen percent (15%) respondents thought that typhoid was water born disease. There were twelve percent (12%) respondents who considered diarrhea as water born disease and one percent (1%) respondents answered that respiratory infections are the result of polluted water.

Results of table 4.2.40 have also been shown in the graphical form as below.

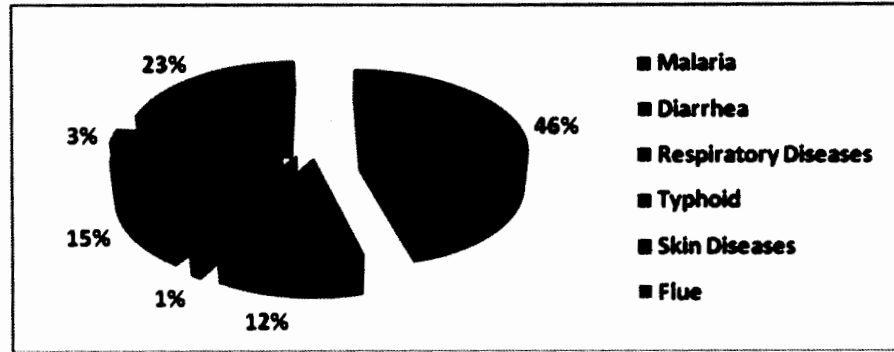


Figure 4.2.35 Distribution of respondents according to their opinions about water born diseases.

4.3 CONCLUSIONS

The current study “**Gender and Environment Linkages in Rural Context...A Case Study of Kuterha Village of District Chakwal**” shows a gender-based focus on divisions and relations of rights, responsibilities, labour and interests, which revealed changes in resource management come about and what they mean for different people. Different roles and responsibilities of women and men have close connections with environmental changes. Both men and women were found to affect the environment through their economic and household activities and resulting environmental changes were affecting people’s well-being.

It is obvious that environmental degradation and high population growth are interlinked. Most of the females in Kuterha village were having five or more than five children, as eighty four (84) respondents out of hundred (100) replied so. There were many factors which might have been the reasons of high population rate in the area. People having low asset base considered children as insurance against old age and illness. Limited access to water supply and fuel increased the need for children to help in the fields and homes (for example to graze cattle, collect water and fuel wood, etc). Furthermore low literacy rate and low status of women means lack of awareness of family planning methods and limited power to control fertility on the part of women.

Although there was not a trend of early marriages in the study area, but late marriages and high number of children were found to be exacerbating the risks to the health of women. There was also a case of breast cancer in the village. Harmful insecticides which have been banned throughout the world were still in use in the village of Kuterha. Most people (66%) were aware of the harmfulness of these insecticides but due to lack of proper advice and alternatives they were not willing to abandon the use of these hazardous chemicals.

Gendered roles mean different exposures of men and women to environmental factors. Many social factors such as access to education, involvement in scientific research, political representation and access to power were found to have limited women's participation in decision making. Women also lacked rights in other aspects of their lives like reproduction, marriage and education for themselves and their children. Although female peasants work equal to male peasants but their wages were much lower as compared to men. They were found to be generating money through the sale of poultry and dairy products, however, this shows that they were not having share in major credit generating activities like crop and animal sale. It was observed that women use natural resources in caring their families (such as growing and processing food, providing water and gathering fuel) and only rarely women use these resources to generate money. Women's lack

of access to natural resources and credit hampered them from buying and using technologies which would be environment friendly. These factors might be possible reasons of declining productivity, food insecurity and environmental degradation in the area. There were many cultural and social obstacles for low participation of female folk in environment decision making process. Moreover, the male dominated society in Pakistan is also a hindrance in female's share in natural resource management.

Women are often most sensitive to environmental changes because they are the first line of defense. Health of natural resources is closely linked to the health and survival of women. Environmental assaults can cause irreversible damage to the various stages of life cycle, particularly to the fetus and growing child. Awareness level among women about environment related health hazards was found to be very low and majority of women were suffering from a variety of diseases. A total of sixty (60) women were selected as a sample from the study population and out of these sixty (60) women, forty four (44) were suffering from spinal deformities and thirty four (34) were suffering from osteoarthritis of knees. These and other related bone diseases were found among women due to long distance traveling in search of fuel wood and water. According to the estimates of World Health Organization, energy used to carry water may consume one third of a woman's daily caloric intake. Typhoid, fever and diarrhea were

identified as the major results of contaminated water. Respiratory infections were also reported and were possibly due to poor quality fuels.

Women as main caretakers of family should take care of sanitation and cleanliness of not only their houses but also of streets. But it was seen that they threw garbage out of their houses in streets or in the adjacent fields. It was so because they didn't have awareness, better options and time to manage the waste in efficient way. As major part of their day was spent in fields, due to which they couldn't pay much attention to their children.

Lack of awareness and lack of facilities were found to be major factors which caused many problems for the poor people of village generally, and women especially as they were hardest hit of the environmental adversities.

4.4 RECOMMENDATIONS

- Women and men should work together to champion the importance of gender and to make environmental programs and policies more responsive to gender concerns. To achieve these goals continued commitment and increased capacity are essential at all levels of society.
- *“Advancing gender equality, through reversing the various social and economic handicaps that make women voiceless and powerless, may also be one of the best ways of saving the environment.....The voice of women is critically important for the world’s future, not just for women’s future”.* (Amartya Sen, 1998 Nobel Laureate in Economics).
- Information and education campaigns targeted at small village dwellers like Kuterha can create awareness of environment related health problems and disease vectors. Government should facilitate and increase local women’s access to education and information in the areas of science, technology and economics. It can enhance their knowledge, skills and opportunities to participate in environment related decisions. There should be especially, campaigns for maternal education as it might increase overall family health, reproductive health

and may lead to low fertility rates. Women should also be informed about alternative methods of cooking, farming, heating and waste disposal.

- There should be a system for the proper training of environmental staff and management staff, at both regional and national level, on the relevance of gender issues to environmental outcomes. There is a need of improved data collection on women's and men's resource use and control over natural resources.
- There should be strengthened and funded women's groups and NGOs that can enable women to develop greater understanding of their environment and its conservation. These women organizations should create easy to read versions of consultation documents and to reach the women in hard-to-reach groups/communities.
- Measures should be taken to empower women as producers and consumers, so that they can take effective actions to conserve and manage the environment, along with men, at household and community level. Leadership and assertiveness trainings should be provided to women. Empowering women as actors would help them in identifying their problems and seeking solutions at their own.

- Opportunities should be provided to indigenous women to participate in decision making process of natural resource management at all levels, including as managers, designers and planners. There is a need for giving the women real rights and ownership, not just “sense of ownership”.
- Involvement of women in decision making process should be encouraged but it is not the only prerequisite for mainstreaming gender issues. The education of men about the advantages and needs of gender equality should also be facilitated and encouraged.
- Education is the most important step to create awareness among people about environment. There is a single school for girls and boys in the village where education was only up to primary level. Only one teacher was provided by the government for the school. It is recommended that this school should be up to secondary level and more teachers should be appointed. As people of the village Kuterha seemed to be very fundamentalist, so they may not allow their girls to study in co-education system. So government should ensure separate sections for girls and boys.

- There was not a hospital, dispensary or maternal health care center in the village or in the vicinity of the village. People usually treat their ailments at their own using traditional remedies. It is recommended that there should be some health care facility in the village or at least in the vicinity of the village having trained medical professionals and lady health workers who can educate the local women about family and maternal health and family planning methods.
- There is an urgent and utmost need of a road in the village which can make the passage of people easy to adjacent villages and nearby urban center. It is very important because in case of any medical emergency, much time is taken to reach the hospital and most of the patients lose their lives. It is also important for women who have to travel long distances to collect water and fuel wood and are suffering from diseases of bones and joints.
- There is not a proper system of piped water supply in the village Kuterha and women have to travel long distances, almost four kilometers (4KM) daily to fetch water. As majority of people of village were poor, so they can not pay water utilities. Improved access to water would help the women in decreasing their workload as caretakers.

- According to Wangari Maathia, a Kenyan environmentalist:
“Implicit in the action of planting trees is a civic education, a strategy to empower people and to give them a sense of taking their destiny into their own hands, removing their fears, so they can stand up for their environmental rights. So that they (women) can control the direction of their own lives.”

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APPENDICES

Questionnaire

Gender and Environment Linkages in Rural Context: A Case Study of
Kuterha Village of District Chakwal.

Background Information

Name:

Gender:

Age:

Academic qualification:

Marital Status:

Occupation:

Only for Female Respondents

Which diseases out of these you are suffering from or had suffered from in past:

(Note: You can tick more than one option)

- | | | |
|------------------------|----------------------------|----------------------------|
| 1. Diarrhea & Vomiting | 2. Spinal Deformities | 3. Osteoarthritis of knees |
| 4. Chest infection | 5. Typhoid/Fever | 6. Malaria |
| 7. Urinary tract | 8. Liver & Kidney problems | 9. Miscarriage/Abortion |
| 10. Breast Cancer | | |

1. How do you perceive the environment?
 - An asset to be conserved
 - A commodity to be used
 - God's precious gift to be admired

2. Do you think that women in your area have enough rights to natural resources like land, water, Forest wood?

- Yes
- No
- Don't Know

3. If females are given the chance to participate in decision making process for natural resource management?

- Yes
- No
- To some extent

4. Do women use natural resources to generate money?

- Yes
- No
- Sometimes

5. Are women legally or traditionally recognized as managers of natural resources?

- Yes
- No
- Don't know

6. If females have the right to decide about family size?

- Yes
- No

7. On average how many children are born by a woman?

- Less than 5
- More than 5
- Five
-

8. In what age girls usually get married in your village?

- 12 to 17 years
- 8 to 25 years
- More than 25 years

9. Who are the major hewers of fuel wood?

- Men
- Women

10. Who is mainly responsible for gathering fuel wood?

- Men
- Women
- Children

11. How many hours/day do you spend in the fields?

- More than six
- Less than six
- I don't work in fields

12. Who mostly acts as the caretaker of family?

- Man
- Woman

13. Approximately how much distance women travel daily to collect the fuel wood and water?

- Almost 4 KM
- Less than 4 KM
- More than 4 KM

14. Due to long distance travelling for collecting fuel wood or water, if women suffered from any disease

- Yes
- No

15. If any, what diseases they are suffering from out of these?

- Spinal Deformities
- Osteoarthritis of knees
- Don't Have any

16. Who makes the decision about the selection of fuel for house hold?

- Male
- Female

17. Which fuel do you mostly use?

- Agricultural residues
- Animal dung
- Forest wood
- Straw

18. Where females mostly do the cooking in your area?

- Inside the kitchen
- In open air

19. Have you ever suffered from any respiratory infection?

- Yes
- No

20. Do women have extra time for tree planting and house gardening, besides performing their daily home chores?

- Yes
- No
- Occasionally

21. Do you have indoor plants in your house?

- Yes
- No

22. Which plant/tree species are you more interested to grow?

- Fuel wood
- Building wood

23. How many plants/trees have you planted within last six months?

- Less than five
- More than five
- None

24. Who sells animal/dairy products (milk, butter, meat, eggs)?

- Males
- Females

25. Do you allow girls for going to schools along with boys?

- Yes
- No

26. Are women allowed to make decisions regarding crop sale?

- Yes
- No
- Occasionally

27. As a female farmer, what fertilizer is easily available and affordable for you?

- Animal manure
- Plant manure
- Compost
- Commercial fertilizer

28. Where Household food is stored?

- Granaries
- Simple sacks
- Something else

29. Where do you dispose off your household waste?

- Courtyards
- Land fill
- Wells
- Streets
- Vacant Fields

30. Do you segregate solid waste before disposing it off?

- Yes
- No

31. Which category of house hold waste is considered as hazardous?

- Spoiled Food
- Glass
- Batteries
- Plastic packaging
- Don't know

32. Do you believe that garbage can cause diseases in humans?

- Yes
- No
- Don't know

33. Do you know that pesticides are dangerous for human health?

- Yes
- No

34. Do you use DDT or DDE insecticides?

- Yes
- No

35. These insecticides have adverse impacts on

- Newly born
- Pregnant Women
- Both
- Don't know

36. Are women hired on wages for agricultural practices?

- Yes
- No

37. If yes, then are women's wages

- Equal to men's wages
- Less than men's wages
- More than man's wages

38. What are the sources of drinking water in your area?

- Hand pump/boring
- Unprotected Well
- Piped Water supply

39. Do you boil water before drinking?

- Yes
- No

40. Which diseases are caused by polluted water in your opinion?

- Malaria
- Diarrhea
- Respiratory Diseases
- Typhoid
- Flue
- Skin diseases

