



BLOCK 3
WOMEN AND LOCAL KNOWLEDGE



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UNIT 7 HEALTH AND WELL-BEING

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7.0 INTRODUCTION

Health and well-being have emerged as popular discourses particularly in the post-Covid pandemic era. While these terms have been often understood within the domains of physical nature of wellness or illness, psychological aspects of health with specific thrust on mental health has appeared as a central theme across the globe. It is now being increasingly realised that one requires a deeper understanding of the concept of health to fully appreciate and realise its true meaning. Both health and well-being entail a complex blend of the physical, psychological and social aspects. This unit attempts to bring about an understanding of the eclectic concepts of health and well-being, their types and meaning. It aims to bring about a holistic awareness of these terms which is beyond the notions of health and well-being as physical constructs and also enumerates few tips for enhancing one's overall health.

7.1 LEARNING OUTCOMES

After studying this Unit, you will be able to:

- Define the concept of health and well-being;
- List the determinants of health;
- Enumerate upon the types of well-being; and
- Comprehend the inter-section between gender, health and well-being.

7.2 CONCEPT OF HEALTH

“Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). The thrust of this holistic definition by the World Health Organisation is that health is beyond the commonly understood and perceived narrow notion that relates it with freedom from illness or disease. It envisages that health has physical, mental, psychological and sociological components associated with it and moves the focus beyond merely the physical abilities or dysfunction in an individual. This definition is also consistent with the biopsychosocial model of health, which considers physiological, psychological and social dimensions in the context of health and illness. To understand simply, a person cannot be considered healthy merely on the grounds of being physically fit. He/ she must have a sound mental and social health and have the ability to live harmoniously in the constantly changing and dynamic environment.

7.2.1 Components of health

It is clear from the above discussion that health is a holistic and eclectic concept with various interlinked components that are indeed interdependent on each other. Let us understand these components of health in greater detail.



Figure 7.1: Components of health

Physical health

Physical health is the most apparent component of health and is usually understood as the ability to perform daily functions by an individual. A person with optimum physical health is likely to have bodily functions and processes working at their peak. One can attain optimum physical health by eating a balanced diet, exercising regularly, and taking adequate amount of rest. Maintaining physical health can protect and develop the endurance of a person, enhance the breathing and heart function, muscular strength and flexibility.

Mental Health

Mental health is a state of well-being in which every individual realizes his/her potential, can cope with normal stresses of life, can work productively and fruitfully and is able to make a contribution to his/ her community (WHO, 2018). It connotes an individual's intra-psychic balance and entails the fit of his/her psychic structure with the external environment and social functioning. Mental health does not connote the mere absence of a mental disorder. In other words, mental health can be simply understood as how one feels about own self, about others and the ability to meet the demands of life. A sound mental health implies a sense of well-being, confidence and self-esteem. It enables a person to fully enjoy and appreciate other people, day-to-day life and his/ her environment. Mentally healthy individuals are able to establish positive relationships, use their abilities to reach their potential and deal with life's challenges.

Social health

Social health involves the ability to form satisfying interpersonal relationships with others and adapting according to changing life situations. Social health deals with the way a person reacts to other persons within his/her environment under dynamic social conditions. It often requires communication, empathy and care for the other people around. It also includes public health (including disease prevention and promoting health through good decision making), family relationships and peer relationships.

In addition to the physical, mental and social components of health as emphasized by the WHO, the current discourses also include **emotional, spiritual and environmental health**. Emotional health is actually a component of mental health that focuses on the person's ability to accept and manage feelings through challenge and change. Spiritual health implies considering life as having a purpose and having a meaning while environmental health focuses on living in a healthy work and living environment and focuses on the conservation of natural resources.

7.3 RELATIONSHIP ACROSS COMPONENTS OF HEALTH

There is a strong interdependence across the components of health. Physical and mental health have a bi-directional and complex relationship which you will read further in the course **BGS 004: Gendered Dimensions of Health**.

Poor mental health is a risk factor for chronic physical conditions as persons with serious mental health conditions are at high risk of experiencing chronic physical health conditions. Similarly, persons with chronic physical health conditions are at risk of developing poor mental health. To illustrate, a person with a medical diagnosis of depression can experience a loss of appetite, interest in food or engaging in day-to-day activities. Poor diet and nutrition, in turn, can make the person vulnerable to physical illness. Similarly, a medical diagnosis of diabetes can lead to mental pressures and undesirable and unpleasant changes in the lifestyle of the individual which can add to the stress levels of the person. The increased stress and frustration may impact his/ her self-confidence, self-esteem and thereby impact the mental health. Since physical and mental health directly impact personal relationships and social interactions, the person's social relationships, interpersonal dynamics are affected and therefore, the social health too gets impacted, which in turn, influences other components of health.

7.3.1 Determinants of Health

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. In the day-to-day life, there are many factors that can really affect how healthy a person is, ranging from the micro to the macro: from individual based factors to societal influences. Health is also determined in part by the access to social and economic opportunities; the resources and supports available in the home, neighbourhood, and community; the quality of education; the safety at workplace; the cleanliness of water, food, and air; and the nature of social interactions and relationships. Therefore, the quality of health care one receives indeed depends on various socio-cultural factors including gender, caste, class etc prevalent in the larger society in which a person lives. These factors determine how likely one is to stay healthy or become ill or injured.

The term '**determinants of health**' was introduced in the 1970s and refers to those factors that have a significant influence, whether positive or negative, on health (Lawrence, 2014). The range of social, ecological, political, commercial and cultural factors that influence health status are known as the determinants of health. These are often complex and interrelating factors that contribute to a person's current state of health and his/ her chances of maintaining good health or becoming ill or injured. Various factors impacting health (WHO, 2017) may include the following:

- Social and economic environment
- Physical environment
- Individual characteristics and behaviours

7.3.2 Social and Economic Environment

Health can be affected by social and economic environment (or the social determinants). The social determinants are the social, economic, political, cultural and environmental 'conditions into which people are born, grow,

live, work and age' (WHO, 2015). These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities as the greater the gap between the rich and poor people, the greater the differences in health. Some of the social determinants of health may include the availability of resources to meet daily needs, educational, economic, and job opportunities, access to health care services, quality of education, availability of community-based resources, cultural beliefs like the customs and traditions, social support and networks, social exclusion, social safety network, health services, gender, race, disability, access to mass media and emerging technologies (e.g., cell phones, internet, and social media) etc.

Let us understand this with the help of an example from our daily lives. It is often seen that among various socio-cultural determinants of health, gender greatly influences the differential power men and women have over control of their lives and influences their overall health and well-being e.g., girls are often socialized to develop traits like being nurturing, supportive, passive, cooperative, warm, and accepting a subordinate status in various relationships (Anand, 2022). Studies have shown that women being the primary care givers in most families, often neglect their own health and nutrition. Gender discriminatory practices during early childhood, poor nutrition, early marriage, lack of adequate attention and access to health care are some of the factors that can be attributed to their lower body mass index, stunted growth, prevalence of various nutritional deficiencies (like anaemia), higher rates of depression and anxiety among women as compared to men (NHFS 5; Anand, 2020).

Similarly, caste system with its societal stratification and social restrictions plays a significant role within the framework of hierarchies of power and domination that impacts the health of an individual. With long history of lived struggles over caste, persons from the marginalised sections in the Indian context, face oppression and subordination in all walks of life. While some barriers might have been broken in the urban context, the caste-based hierarchies and inequalities are dominant in the larger Indian context. These impacts the level of awareness among those from the marginalised sections about holistic health, access to health care and related services, usage of contraception, immunisation, maternal and child health and overall inclusion in society as 'equal citizens'.

- Thus, we can say that **health inequity** is determined by broader social factors such as socio economic status, gender, caste etc.
- **Physical environment:** Factors in the physical environment viz. safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health. In the present scenario, there is a lot of thrust being given to the air quality around us especially in the metro cities, global warming and its impact on climatic change, availability of clean drinking water, importance of sanitary and hygienic surroundings around us. All these directly impact an individual's health.

- **Individual characteristics and behaviours:** These include hereditary as well as behavioural factors that impact an individual’s health. The hereditary factors play a part in determining lifespan, overall health and the likelihood of developing certain illnesses related to blood pressure, cholesterol levels, body weight etc e.g. scientific evidence suggests that genetic predisposition increases the likelihood of a person developing various diseases like diabetes, cardiovascular diseases, and some forms of cancer. Furthermore, person’s personal behaviour– balanced diet, level of physical activity, lifestyle practices such as smoking, drinking, and manner of dealing with life’s stresses and challenges all affect health. By eating healthy diet and indulging in some form of physical exercise, one can not only strengthen health but also lower the risk of chronic diseases, such as diabetes, heart disease, high blood pressure and associated disabilities.

Thus, we can conclude that health is the result of multiple factors including genetics, lifestyle and socio-cultural factors related to an individual, structure of the society and its policies. The aforesaid factors determine health of an individual and play a crucial role in determining his/ her overall health. For instance, lack of income further reduces access to resources which may increase stress levels and further lead to incidence of abuse, violence, substance use etc. Thus, it is very important to understand the role of social determinants of health as due to the huge differentials among and between classes and castes, gender gaps and wide regional variations in both disease burden and response by the health systems. Similarly, individual’s lifestyle patterns can impact health. Lifestyle diseases like obesity, heart diseases, diabetes and AIDS are prevalent in contemporary era and have a direct relationship with the individual characteristics and behaviours.

Check Your Progress Exercise I

- Note:** I. Use this space given below to answer the question.
II. Compare your answer with the Course material of this Unit.

1. Explain the concept of health and enumerate its components.
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2. List the three determinants of health.
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7.4 UNDERSTANDING WELL-BEING

The holistic understanding of health by the WHO, links it explicitly with the concept of well-being, and conceptualises health as a human right requiring physical and social resources to achieve and maintain. The First International Conference on Health Promotion that met in 1986 in Ottawa adopted a Charter to achieve health for all by the year 2000. This Charter describes health as ‘a resource for everyday life, not the object of living’, health implies “living well”. Thus, the notion of well-being refers to the overall experience of health, happiness and prosperity of an individual. It implies a sound mental health, optimum level of satisfaction with one’s life, having a sense of meaning or purpose and the ability to manage stress in the day to day functioning by the individual.

According to the World Health Organisation, well-being is a “resource for healthy living” and a “positive state of health”. It enables an individual to function well in a holistic manner- psychologically, physically, emotionally as well as socially. In other words, well-being’ can be described as a state of holistic living that enables a person to explore and develop her/his potentials, form positive and prosocial relationships in life and also be creative and productive thereby making significant contributions to the community and society at large. In other words, it connotes the mental and emotional state of one’s life (Diener, Lucas, & Oishi, 2002) and can play a significant role in predicting positive life outcomes for an individual.

According to **Shah and Marks**, “well-being is more than just happiness. As well as feeling satisfied and happy, well-being means developing as a person, being fulfilled, and making a contribution to the community” (2004: p.2).

There is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfilment and positive functioning (Fray, 2002; Keyes, 1995). In other words, well-being can be described as judging life positively and feeling good and functioning well.

7.4.1 Well-being as a Holistic Concept

Well-being, like health, is a holistic concept as a person’s well-being is influenced by everything around him/ her and the diverse and unique experiences he/ she has at different stages in life. It depends on various factors deeply embedded in the person’s social context family, community and society. Well-being can also be understood in the context of **Bronfenbrenner’s** perspective on human development based on ecological models as presented below:

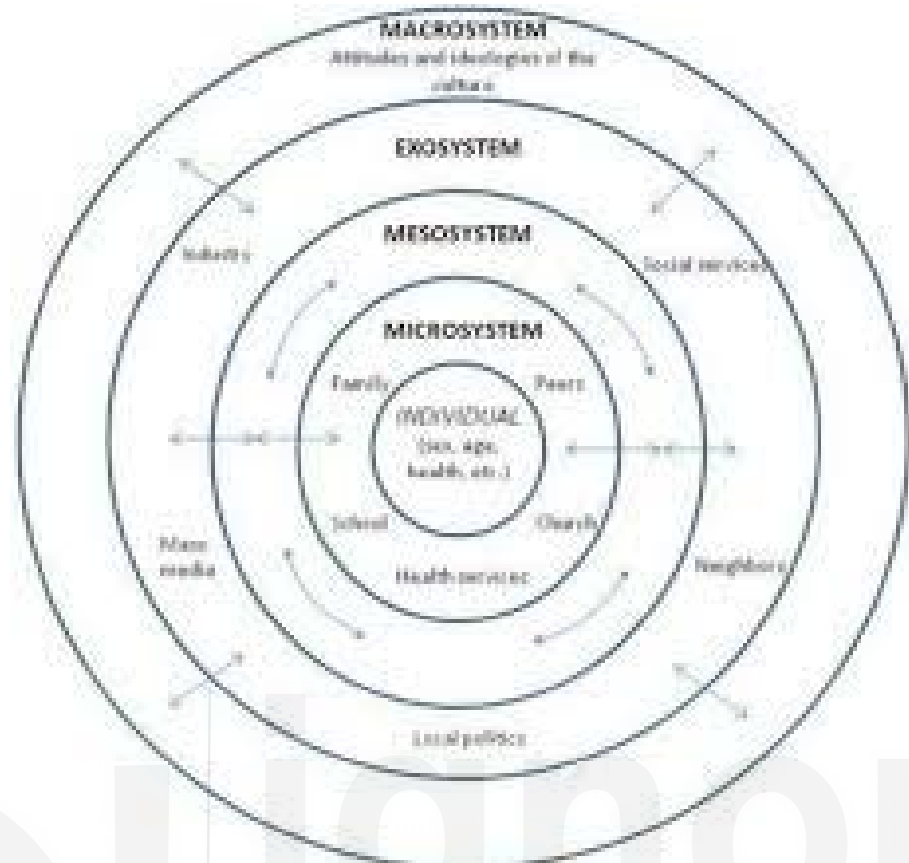


Figure 1.2: Bronfenbrenner's Ecology of Human Development (1979)

Source: <https://www.simplypsychology.org/Bronfenbrenner.html>

Well-being focuses on the interplay of individuals, incorporating their social and cultural dimensions contributing to their satisfaction with life. Bronfenbrenner's perspective reinforces the critical and pervasive role that various levels of interaction have on the individual's behaviour: the *Microsystem* (the immediate environment of the individual including everyone that he/ she interacts with on a regular basis); the *Mesosystem* (the interaction between members/components of the microsystem); the *Exosystem* (the broader environment that directly affects the immediate environment of the individual); the *Macrosystem* (the overarching system that consists of culture, laws, economy, politics, etc); and the *Chronosystem* (how certain variables affect the individual over time, including life events and changes in socioeconomic status). Simply put, a person's well-being is directly related to his/ her immediate environment- family, peers, school/ college; their interrelationships, the larger community and the larger society (cultural norms and values, laws, policies and institutional mechanisms). Since no individual can exist in isolation, the social relations, interpersonal dynamics and the larger systems and their sub systems impact an individual and his/ her sense of well-being.

7.4.2 Components of Well-being

In 2012, an expert group of the World Health Organization Regional Office for Europe met in Paris to determine the 'measurement and target-setting' of well-being. Health and well-being have a two-way relationship, each influencing the other.

Subjective component

The subjective approach of well-being actually means, taking into account the opinions of individuals about their own perception on well-being. Thus, we can ask questions regarding their overall satisfaction in life (Diener, Suh, E. and Oishi, 1997) or we can use an index based on questions relating to different aspects of life and how individuals think and feel about their own well-being. It includes various aspects such as life satisfaction (evaluation), positive emotions (hedonic), and whether their life is meaningful (eudemonic). For example, WHO has prepared the "WHO-5 Well-Being Index" which is a questionnaire that measures a person's current mental well-being (time frame the previous two weeks)." Originally developed to assess both positive and negative well-being, this five-question version uses only positively phrased questions to avoid symptom-related language.

According to **Diener and Suh (1997)**, subjective well-being consists of three interrelated components: life satisfaction, pleasant affect, and unpleasant affect. Affect refers to pleasant and unpleasant moods and emotions, whereas life satisfaction refers to a cognitive sense of satisfaction with life. Subjective well-being also includes the "quality of life". The subjective perception on the well-being state differs depending on the cultural differences and the overall context. For example, obesity may be perceived differently according to the social norms or social expectations.

Objective component

An objective point of view describes well-being as a condition of an individual or a group, with reference to the social, economic, psychological, spiritual or medical attention. A high level of well-being is, in a sense, a positive experience of an individual or group. Similarly, a low level is associated with negative experience. The objective perspective implies the use of indicators and is more of a proxy measure based on assumptions about basic human needs and rights, including aspects such as adequate food, physical health, education, and safety. Their number must be as small as possible (some indicators are required, others are optional), and the data to be submitted depends on several variables: age, gender, ethnicity, socio-economic status, belonging to vulnerable groups, etc. Well-being is in general a term used to describe a condition of an individual or a group, with reference to the social, economic, psychological, spiritual or medical attention. A high level of well-being is, in a sense, a positive experience of an individual or group. Similarly, a low level is associated with negative experience (Sfeatcu et al, 2014). Examples of objective component may include the standard of living which refers to the usual scale of our expenditure, the goods we consume and the services we enjoy. It includes the level of education, food consumption, occupation and working conditions, housing, social security, clothing, recreation and leisure and human rights. Objective well-being can be measured through self-report (e.g., asking people whether they have a specific health condition), or through more objective measures (e.g. mortality rates and life expectancy).

7.5 TYPES OF WELL-BEING

Researchers from different disciplines have examined different aspects of well-being that broadly includes the following (Diener, Suh and Oishi, 1997; Ryff and Keyes, 1995)

- **Physical Well-Being:** Physical well-being includes the ability to improve the functioning of the body through healthy eating and good exercise habits
- **Psychological Well-Being:** Psychological well-being implies the feeling of autonomy (the freedom to make one's own decisions), self-acceptance and self-confidence. It includes an awareness of one's strengths and weaknesses, the ability to manage everyday situations, having positive relationships with family, friends or others, having a sense of purpose or meaning in life and personal growth (facing challenges that are manageable and lead to developing new skills or becoming a better person).
- **Emotional Well-Being:** Emotional well-being simply connotes 'being happy', experiencing positive emotions like love, joy or compassion, and feeling being generally satisfied with life. The ability to practice stress-management techniques, be resilient, and generate the emotions that lead to good feelings. It includes feelings of happiness, contentment and enjoyment.
- **Social Well-Being:** Social well-being is understood as a sense of belonging to a community and making a contribution to society. The ability to communicate, develop meaningful relationships with others, and maintain a support network that is needed to feel a sense of integration and active participation in a community and overall environment.
- **Economic Well-Being:** Economic well-being implies the ability to meet one's basic needs and feel a sense of security.
- **Intellectual Well-Being:** It is important to gain and maintain intellectual wellness as it helps us to expand our knowledge and skills in order to live an enjoyable and successful life.
- **Workplace Well-Being:** The ability to pursue one's interests, values, and purpose in order to gain meaning, happiness, and enrichment professionally.
- **Spiritual Well-Being:** It can include feeling connected to a higher power, a sense of meaning or purpose or feelings of peace or transcendence. This is the ability to experience and integrate meaning and purpose in life. It is achieved through being connected to our inner self, to nature or even a greater power.

7.6 WELL-BEING AS A STATE OF EQUILIBRIUM

Another popular notion of well-being describes it as the state of equilibrium/homeostasis, and the fluctuating state between challenges and resources. It explains well-being as the balance point between an individual's resource pool and the challenges faced as illustrated below:

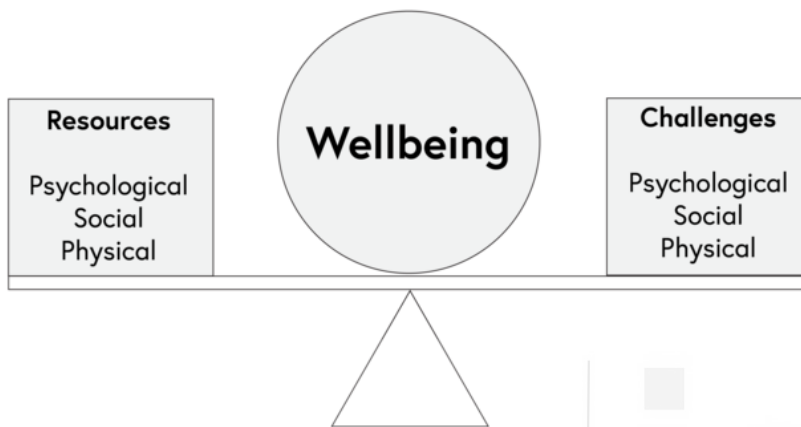


Figure 1.3: Well-being as a state of equilibrium

Source: Dodge, R., Daly, A., Huyton, J., & Sanders, L. (212)

The see-saw in the above figure represents the drive of an individual to return to a set-point for well-being (Brickman and Campbell, 1971; Headey and Wearing, 1992) as well as the individual's need for equilibrium or homeostasis (Herzlich, 1973; Cummins, 2010). Challenges of well-being are the elements that can affect the individual's equilibrium; tipping the see-saw from side to side (Hendry and Kloep, 2002). *Each time an individual meets a challenge, the system of challenges and resources comes into a state of imbalance, as the individual is forced to adapt his or her resources to meet this particular challenge* (Kloep, Hendry and Saunders (2009, p. 337).

7.6.1 Enhancing health and well-being

The United Nations' *Transforming our world: the 2030 agenda for sustainable development* provides us with an opportunity to address contemporary world challenges. While the Sustainable Development Goal (SDG) 3 is devoted to good health and well-being, health contributes to almost all the other goals. It is therefore imperative that one pays attention to overall health by paying attention to having a well-balanced diet, engaging in physical exercise, building emotional skills through engaging in positive thinking, practicing meditation and mindfulness, stress management etc. It is also necessary to build one's social skills by means of effective communication, gratitude, kindness, and communication and also contributing towards support our environment.

Health promotion interventions target the determinants of health and well-being rather than illness and can take place at an individual, community, or structural levels. These determinants aim to improve individual well-being, enable healthier and more sustainable communities, facilitate environments

which support improved health and achieve structural changes in policy and law which benefit health and reduce health inequalities (Anand, 2022). Using a multi-pronged approach with thrust on the socio cultural issues like gender, caste, class in the Indian context, one can promote health as a holistic concept of health.

Check Your Progress Exercise 2

Note: I. Use this space given below to answer the question.

II. Compare your answer with the Course material of this Unit.

1. How is well-being a holistic concept? Explain.

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2. Briefly, enumerate upon the types of well-being.

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7.7 LET US SUM UP

In this Unit, we have focussed on the basic concepts of health and well-being. Health is a holistic term inclusive of physical, emotional, mental, environmental and spiritual components. There is also a strong interdependence across the varied components of health. There are various determinants of health including the social and economic environment, physical environment as well as the individual characteristics and behaviours.

The holistic understanding of health links it explicitly with the concept of well-being which enables a person to explore and develop his/ her potentials, form positive and prosocial relationships in life and also be creative and productive. Well-being has two broad elements: subjective and objective. The subjective approach of well-being actually means, taking into account opinions of individuals about their own perception on well-being. The objective point of view describes well-being as a condition of an individual or a group, with reference to the social, economic, psychological, spiritual or medical attention.

7.8 UNIT END QUESTIONS

1. Discuss the importance of health in the contemporary Indian scenario
2. Discuss the state of Well-Being as an equilibrium.
3. 'Health and Well-Being are impacted by various socio-cultural factors. Discuss the given statement with examples.

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7.10 SUGGESTED READING

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UNIT 8 FARMING AND FOOD PRODUCTION

Structure

- 8.0 Introduction
- 8.1 Learning Outcomes
- 8.2 Local Knowledge – Concept
- 8.3 Debates on Gender and Environment
 - 8.3.1 Eco-feminism
 - 8.3.2 Multiple Perspectives on Gender and Environment Debate
- 8.4 Women, Farming and the Local Knowledge Systems
- 8.5 Let Us Sum Up
- 8.6 Unit End Questions
- 8.7 References
- 8.8 Suggested Readings

8.0 INTRODUCTION

In recent years, in agriculture, environment and gender, the emphasis has been on studying and drawing upon people, and especially women's local knowledge for subsistence and sustainable technological development. Local knowledge emerging from the cultural environment of people, using people's ideas, experiences and practices enables them to be agents of social change.

8.1 LEARNING OUTCOMES

After reading this unit you shall be able to:

- Understand what constitutes local knowledge?
- Trace inter-linkages between women's knowledge system and traditional farming practices; and
- Learn about diverse perspectives on understanding the relationship between gender, environment and development.

8.2 LOCAL KNOWLEDGE: CONCEPT

The study of local agricultural knowledge is not new. Anthropologists have been studying the indigenous societies and their agricultural systems for over a century in a wide range of geographic regions. Patterns of human subsistence in traditional agricultural communities have been described in the works of **Rappaport (1968)** and **Brokenshaw et. al. (1980)**, **Shiva (1993)**, **Mies & Shiva (1993)** and many others, addressing social relations of production, patterns of interactions between the people and their environment, and the relationship and interaction of the villages with the outside world. These works have contributed to the building a human-

ecological and social perspective of customary local farming and food production practices.

As nations in the Global South began to ‘modernize’ their agriculture, the customary knowledge of cropping patterns, farming practices, and the ecological rationality behind local agricultural practices were gradually lost (Altier, 1990). Modern agriculture, characterized by large-scale technological interventions, mono-cropping and commodity approach has tended to ignore the cultural, social, gendered and environmental complexities which are embedded in local agriculture. By ignoring this diversified nature of customary farming practices, modern agriculture has gradually led to the erosion of the knowledge base of marginal farmers and women peasants. Eco-feminist **Vandana Shiva** (1993) argues that local knowledge disappears with the spread of the dominant Western scientific system. She claims that this ‘monoculture of mind’ in agriculture suppresses and negates local knowledge.

According to Atte (1989) ‘each rural group has developed knowledge encompassing theory, concepts, interrelations, factual data and attributive information, of a high degree of accuracy. Such knowledge is so good that such societies have been able to exploit them both for social organizations and productive endeavors to maintain the group’ (p. 9). Muchena (1991) describes **local knowledge as a holistic approach, because it integrates a system of beliefs, values, practices, and cognitive understanding**. According to Greetz (1983), the local knowledge reflects the cognitive diversity of the people, and the diversity is always manifested through local language. The local embeddedness of ecological knowledge has made the knowledge successful in both traditional and modern societies. This is apparent in the range of terms used for local knowledge: such as people’s ecological knowledge (Gupta 1992), native knowledge (Beteille 1998), subaltern knowledge (Kothari 2002), indigenous technical knowledge (Howes and Chambers 1979), people’s science (Richards 1985) and so on.

Box No: 8.1: Defining Indigenous Knowledge

Indigenous local knowledge is sometimes called ‘traditional’ or ‘folk’ knowledge. Terms such as indigenous, traditional and folk, however, are themselves complex and debatable. What is important to understand, is that a body of knowledge cannot be explained independent of the context, where it has originated, and how it is deeply embedded in social relationships including gender relations.

Local knowledge is a cumulative body of knowledge, developed by people with extended histories of interaction with the natural environment This encompasses language, naming, classification systems, resource use practices, ritual, spirituality and worldviews (Berlin et al. 2000). Local knowledge provides the basis for local-level decision-making in fundamental aspects of life such as hunting, fishing, agriculture, animal husbandry, health care and food.

Local knowledge can also be defined as a broad arena encompassing diverse amalgamations of decision-making strategies and activities in areas like knowledge among the shepherds (Agrawal 1993), multiple trees cropping systems of smallholders (Thrupp 1989), practices for domestication of crops (Reed 1977; Rhoades 1989), and plant taxonomies (Brush 1980). These terms signify that local knowledge has been viewed as a set of practices intertwined with the community and embedded within the communities' worldviews in diverse areas of life. In the 1980s, sustainability emerged as a powerful concept to bring transformation in the development paradigm, invoking initiatives and debates on restoring community-based ecological knowledge systems in areas of water and forest management (Guha 2013). This new discourse on sustainability has enabled policymakers, development agencies and grass-root activists to meaningfully engage with local knowledge system largely in the field of farming, health, environment, land and forest. Around the same decades, the global environmental crisis, droughts and famines, soil degradation, deforestation, desertification and unprecedented climate change became the contexts within which women's relationship with the environment was interrogated by a range of feminist scholars (some of whom subscribed to an 'ecofeminist' philosophy).

Check your progress I

Note: I. Use this space given below to answer the question.

II. Compare your answer with the Course material of this Unit.

1. What do you understand by local knowledge?

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2. What are the other names used for local knowledge?

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8.3 DEBATES ON GENDER AND ENVIRONMENT

The debate on gender and environment has two dimensions: (1) that gender mediates human/environment interactions and all environmental use, knowledge, and assessment; and (2) that gender roles, responsibilities, expectations, norms and the division of labour shape all forms of human

relationships to the environment. “The ancient identity of nature as a nurturing mother links women’s history with the history of the environment and ecological change. In investigating the roots of our current environmental dilemma and its connections to science, technology and the economy, we must re-examine the formation of a world view and a science that, by reconceptualizing reality as a machine rather than a living organism, sanctioned the domination of both nature and women” (**Carolyn Merchant**).

Since ages, it has been categorized that men are more attached to culture while women are attached to nature. Since nature is considered as inferior to culture, women got dominated over by men. This is the traditional perspective over which many perspectives and thoughts critiquing it emerged over a period of time. As Sherry Ortner argued, the connection between women and nature was clearly rooted in the biological processes of reproduction. Many others did not subscribe to the nature-culture dichotomy but would agree that biologically and ideologically, women are more attached to nature. To quote Merchant further, “between sixteenth and seventeenth centuries, the scientific revolution and the growth of a market-oriented culture in Europe undermined the image of an organic cosmos with a living female, earth at its centre. This image gave way to a mechanistic worldview in which nature was reconceived as something to be mastered and controlled by humans. The twin ideas of mechanism and of dominance over nature supported both the denudation of nature and male domination over women”.

The concept of male domination over women and its equating with control over nature has gained wide acceptance. Men are usually seen as materialistic in their outlook and women as nurturers. As for example, in the case of the Chipko Movement, the male members of the region did concede to the demand from the commercial companies and gave a go-ahead for the felling of the trees. But the women, sensing the presence of the commercial companies’ efforts to cut down the forests, gathered together to save the trees from felling by making a human chain around the trees. The role of women in various environmental movements have come to gain more prominence thereby making the environmental movements synonymous with women’s inclination towards nature’s protection and their role as caretakers of natural environment.

Furthermore, women were involved in bringing the issue of environmental degradation and the necessity to take care of nature; this further strengthens the view of women being more sympathetic to nature. Even the policymaking, under women, was more pro-environment. For example, Mrs. Indira Gandhi was the first prime minister who represented India at the Stockholm Convention in 1972. She also brought a halt to the tree-felling activities in the Himalayan region that came under threat for commercial use. The policy of development that is more oriented towards expanding the urban areas and which has come to be identified as against the tenets of natural environment is associated with the policy-making process by male members. As **Vandana Shiva** observed, “Modern reductionist science, like development, turns out to be a patriarchal project, which has excluded

women as experts, and has simultaneously excluded ecology and holistic ways of knowing which understand and respect nature's processes and interconnectedness as science". She opines that the traditional knowledge systems with which women are well versed have been affected and continue to do so under the impact of modern science. The reasons for understanding man's and woman's relationship with nature is said to have been rooted in "material reality". Men are viewed as materialistic in nature and giving into the demands of modern civilization and its so-called progress; on the other hand, women are taken as the first victims of whatsoever damage is done to the society in any form. It is even more so in the case of environmental degradation. Since they are the gatherers of the household necessities, their problems become manifold. With more and more parts of the world reeling under the impact of environmental degradation, problems like natural resource depletion, deforestation, deteriorating soil conditions and perennial water problems apart from pollutions of all kinds have multiplied. The trend is towards taking away the rights of local communities with regard to the environment.

Many a system have been affected in the process and there is a gradual erosion of traditional resource management system, knowledge and wisdom that once greatly contributed to the sustenance of the communities on the whole. Increasing urbanization, settlements, advances in science and technology and the materialistic and consumerist culture are gradually eroding the value systems towards sustaining the natural environment. In this context, the debates have centered on issues relating to men's and women's relationship with nature. The perception has widely been seen that men are at the forefront of policy-making that is not conducive to environmental conservation and which is tilted more towards development that compromises environmental conservation. Women are perceived, because of their strong ideological leanings towards nature, as being the caretakers and nurturers of nature and as opposing 'development that is destructive'. The contemporary catchword is '**development without destruction**' in this context. The world over, more so in the developing world, women are participating in more and more ecological movements as the regional conditions prompt them to do so. In the developing world, the challenges of development are manifold wherein, to catch up with the developed West, the nations are pursuing the policies of liberalization and privatization that are capital-oriented. In this scheme of development, the tilt is obviously towards compromising the environmental standards that one ought to follow. In the name of development, numerous projects are being undertaken that are destroying the environment and depleting natural resources. Therefore, the development vs environment is seen more in gender interactive terms and has marked the beginnings of debates on gender and environment.

8.3.1 Eco-Feminism

The reasons for the emergence of eco-feminism are manifold which are discussed in this section. The nature is viewed in terms of feminine principle. Through ancient ages, women in general are considered as an inseparable part of nature. At one level, nature is symbolized as the embodiment of the

feminine principle, and at another, she is nurtured by the feminine to produce life and provide sustenance (Vandana Shiva, 1988, p.38). This is a manifestation of shakti or energy, from which all existence arises. This energy is called nature (Prakriti). Nature, both animate and inanimate is thus an expression of shakti, the feminine and creative principle of the cosmos; in conjunction with the masculine principle (Purusha), Prakriti creates the world. Nature is inherently active, a powerful, productive force in the dialect of creation, renewal and sustenance of all life (Ibid). The world derives its activity and diversity manifest in the form of life on earth mountains, trees, rivers, animals etc. The human being is to live in consonance with nature. Unfortunately, man's attitude towards nature has turned into that of a dominant force, who can subjugate nature to the maximum extent. This symbolizes man's eternal urge to demonstrate domination over woman.

Vandana Shiva identifies women as traditional natural scientists, whose knowledge is ecological and plural, reflecting both the diversity of natural ecosystems and the diversity in cultures that nature-based living gives rise to (p.41). She credits women with producing and reproducing life not merely biologically but also in terms of providing sustenance, more so a social role. **Mies**, who worked on 'Ecofeminism', describes woman's special relationship with nature. The relationship is based on mutual reciprocal process, mutual cooperation and as producers of new life. With the disharmony created by the affluent and consumerist culture, the natural relationship finds enormous strains. Shiva observes that the disharmony is triggered 'by the arrival of masculinist, reductionist, industrial, colonizing forces of Western culture'. The large number of women participating in the ecological movements, and even defying their men, demonstrates their innate power or shakti.

In India, in spite of women's suppression, there is a universal agreement, even if grudgingly, that women are nurturers of nature. The ancient civilization and texts have often put women on a higher pedestal in the context of ecological/ environmental concerns. This view finds a widespread critique among the Western scholars, thus bringing to the fore the cultural differences and the perception of nature as a sacred force to be restored and not exploited. The active participation of women in environmental movements has been widely recognized all over the world. As **Guha** says, 'some writers have interpreted this "feminization" of the environmental movements in terms of culture (Guha, 2006, pp.58-59). He cites **Anil Agarwal's** view wherein he says that 'the destruction of the environment clearly poses the biggest threat to marginal cultures and occupations like that of tribals, nomads, fisherfolk and artisans, which have always been heavily dependent on their immediate environment for their survival. But the maximum impact of the destruction of biomass sources is on women. Women in all rural cultures are affected, especially women from poor landless, marginal and small farming families. 'Seen from the point of view of these women, it can be argued that all development is ignorant of women's needs, and often anti-women, literally designed to increase their work burden' (Guha 2006, p.59). **Susan Buckingham-Hatfield** explains well the origin of eco-feminism. The term eco-feminism was coined in 1974 when French woman **Francoise d' Eubonne** called for an ecological revolution to be led

by women in order to save planet Earth. Eco-feminism has evolved as an approach to articulate the society-nature relations and emerged as a prescription for how these relations can be transformed. The eco-feminist position falls within two broad areas such as cultural eco-feminism and social eco-feminism.

Cultural eco-feminism identifies a powerful and positive link between women and nature, particularly through such female reproductive functions as childbirth and menstruation. This connection between women and nature is used to argue that women are better placed than men as advocates of nature. Social eco-feminists argue that because women and nature have both been subjugated by a society dominated by men, women, through the roles they play, are in a better position than men to speak for nature, because of this shared experience of domination. Social eco-feminists contest that there is anything more natural in a woman's body than in man's and disagree with cultural eco-feminists' belief that there is something which constitutes a woman's essence (Susan Buckingham-Hatfield, 2000, p.35). The cultural eco-feminists basically attempt to reverse the traditional hierarchy of male domination over women demonstrating the positive side of those characteristics previously held to be inferior and stressing the importance of women-nature links to the survival of nature. On the other hand, social eco-feminist perspective asserts that it is the social role ascribed to women which identifies women more closely with nature. Women's closeness to nature, they argue, is more out of the social construction through generations. It is because of this that the women find themselves unable to distance themselves from nature and experience subjugation and discrimination based on their socially ascribed caring role. These two perspectives are often incorporated in the eco-feminist arguments with ecological and social analysis.

Cecile Jackson criticizes eco-feminism for too much of idealizing women and for obscuring the differences and conflicts between them. She particularly identifies the tension between women in the North and South, where the former tend to construct the latter as 'victims'. In South, she argues, women's relationship to each other and to the environment is heavily influenced by their class, age and position in the family and that any of these factors might result in treating the environment less favourably than eco-feminists would expect (cited in Susan Buckingham, pp.38-41). **Biehl** specifically denounces the role of women as special custodians of nature and advocates more of a society in which men and women aspire to an ethic of humanity. In spite of the differing views, most of them agree to the fact that eco-feminism should be more inclusive and pluralistic and should give space to many of the voiceless people. This section is adapted from **Unit 11: Women and Environment of the course MGPE 012: Women and Peace.**

8.3.2 Multiple Perspectives on Gender and Environment Debates

From the early 1990s, several alternative perspectives to the discourses of eco-feminism and Women, Environment & Development (WED) approach began to emerge world over. The critiques to WED approach and eco-

feminism have come from the works of **feminist environmentalist Bina Agarwal** (1992), **feminist political ecologists Rocheleau et al.** (1996), and proponents of **Gender, Environment and Development (GED) perspective Green et.al** (1998) and **Leach** (1994). They conceptualized that the gender-environment inter-linkages are grounded in socio-political relations of the community therefore, the focus of gender and environment relationship needs to be context specific while denouncing the principles of universalism and essentialism of eco-feminist notion which states that women share a special relationship with the nature. And this relationship is natural and an unchanging one. **Faya V. Harrison** (2015) articulated the relationship between gender and environment under six major theoretical positions which includes:

- **The Received Tradition of Environmentalism:** This approach has its origin in liberal feminism which looks at women as participants and partners in environmental programmes for conservation and protection.
- **Eco-feminism:** This position articulates that women forge a close connection with nature based on the shared history of subordination of women and nature by the patriarchy with specific reference to the dominant Western culture.
- **Feminist Environmentalism:** It places significant emphasis on the material condition as the basis to understand women’s relationship with environment.
- **Socialist Feminism:** It focuses on gender relations within the spheres of production and reproduction. For instance, how does women’s access to resources shape their relationship with nature?
- **Feminist Post-structuralism:** It tries to locate the gender and environment relationship through the experiences which are different in relation to race, caste, class, ethnicity, sexuality and age.
- **Feminist Political Ecology:** It articulates various socio-political and economic contexts which influence environmental policies and practices at both global and local levels. For instance, it tries to understand the relationship between gender and environment which is grounded in the politics of decision-making and access and control over resources.

Check Your Progress Exercise II

Note: I. Use this space given below to answer the question.

II. Compare your answer with the Course material of this Unit.

1. Write short notes on ‘Eco feminism’.

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2. Identify ant two theoretical positions which explains the gender and environment debates.

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8.4 WOMEN, FARMING AND THE LOCAL KNOWLEDGE SYSTEMS

The work of feminist scholars such as **Vandana Shiva, Maria Mies, Leach** and others became influential in drawing the inter-connection between women, environment and agriculture, and community knowledge systems by offering a critique to the forces of globalization. They believed that environmentally sustainable and egalitarian development is possible in the “recovery of feminine principle” of working, co-habiting and co-existing with nature (Leach, 2017, 34). The expansion of global economy through industrialization has visible impacts in agriculture. Agricultural modernization has led to alienate women peasants, Adivasi women and others form their farmland. Green revolution had both positive and negative outcomes but its negative impacts were obvious for women and the ecosystem. **Vandana Shiva** summarises:

The Green Revolution is a prime example of the development paradigm. It destroyed diverse agricultural system adapted to the diverse ecosystems of the planet, globalizing the culture and economy of an industrial agriculture. It wiped out thousands of crops and crop varieties, substituting them with monocultures of rice, wheat and maize across the Third World. It replaced internal inputs with capital and chemical intensive inputs, creating debt for farmers and death for ecosystem (1997: 107, cited in Hawthorne, 2008, p. 217).

Similar situations were found in India where export agriculture and genetically modified crops have created seasonal starvation among poor and marginal farmers (Shiva, 1993). Among them women and children are the worst suffers due to their differential social positions. Subsequently, in the post 1960’s development practices, a growing emphasis has been placed on analyzing or theorizing peasant knowledge systems (Aggarwal 1995; Ramdas *et.al* 2001). Over the years, farmers have developed and tested local knowledge forms for the management of soil fertility, soil conservation, irrigation, pest control and forest management for their survival and livelihood. **Changkija** (2012) studied a wide range of indigenous farming practices of the hills tribes of the North East India. These indigenous practices are integral part of their agricultural system which help in soil conservation and soil fertility management in mountain areas. The author also discusses local farming practices such as, *Alder tree based* shifting cultivation, *Zabo* farming system, Bamboo drip irrigation and Wet terraced

paddy cultivation of different ethnic communities of the region.

In India, feminist Scholars like **Sumi Krishna, Bina Agarwal, Govind Kelkar and Dev Nathan** offered an alternative view of understanding Asian women's engagement with their local environments which is deeply embedded in social and gendered complexities. For instance, in the context of Natural Resource Management (NRM), **Sumi Krishna** reinforces the role of community in deciding/shaping women's access and use of natural resources. While undertaking a research study in the area of gender and biodiversity, she writes, "it was evident that the concept of gender was inadequately understood and fuzzily implemented in conservation and agro-biodiversity policy and programmes, resulting in using women's knowledge and skills in an instrumental way" (Krishna, 2008: 10). In India, these debates over conservation programme and policies have led to the resurgence of women's knowledge system in agriculture as a sustainable means to promote farmer-inclusive growth. In India, forest management, cattle-rearing, and agriculture have been traditionally seen as female spheres (Arora-Jonsson 2013), which enabled women to generate a wide spectrum of local knowledge in diverse areas of life and livelihood. **Sumi Krishna** (2008) in her book, *Genderscapes: Revisioning Natural Resource Management* discusses about inherent gender ideologies associated with the rice cultivation which are prevalent among various farming communities of India.

There has been field based research to understand the inter-linkages between gender roles and local knowledge in farming practices. **Jumyir Basar** (2014) in her book, *Indigenous Knowledge and Resource Management: Perspectives of a Tribe in Northeast India* studied the inter-linkages between indigenous knowledge system and the resource use pattern among the Galo tribe of Arunachal Pradesh. In the Galo community, farming practices have its origin from various myths. As per the Galo mythology all living beings share a common ancestor, therefore human life is not different from other living beings. Human beings are part of the nature and not the controller of nature. "The survival of human itself depends on the survival of the wild" (p. 45). Gender division of roles is clearly followed when it comes to organization of various farming activities. For instance, hunting has been considered as men's activities and foraging activity is largely undertaken by the women.

Similar experiences of how women play crucial role in maintain agricultural biodiversity have been observed among the marginal farmers around the world. **Susan Hawthorne** (2008) writes about farming Cassava in Nigeria and beans in Kenya which are associated with women's farming practices. **Flora Nwapa** wrote poetry on cassava farming in Nigeria and in her book *Cassava Song and Rice Song in the year 1987*. Nwapa explains how she began to grow cassava during the civil war period which helped her to survive during the war. The cultivation of cassava shares symbiotic relationship with women and the stems of the plant were used by women as symbol of resistance against the British domination (cited in Hawthorne, 2008: 209).

Examples can be drawn from Kenya where Kikuyu women grow traditional

beans which are rich in nutrition and receives significant attention in their social and ritual lives at the time of marriage negotiation, pregnancy and childbirth, and post-menopause. This form of local knowledge is tapped as potential resources for innovating new technologies in areas of health and nutrition.

8.5 LET US SUM UP

This Unit brings together a wide range of approaches to reclaim women's knowledge system in domains of agriculture, forest and natural resource-management. It discusses briefly the contribution of women in marinating the cultural and biological diversities in India and other parts of the world. The unit reflects the significant contributions of feminist scholars in articulating the relationship between gender, environment and traditional farming practices. The unit uses examples, poems and narratives of various farming groups to deeply understand the inter-linkages between women's domain of knowledge and traditional farming practices.

8.6 UNIT END QUESTIONS

1. Write an essay on the multiple perspectives on Gender and Environment debate.
2. "There is an interlinkage between Women, Farming and Local Knowledge System"- Comment the statement with suitable examples.
3. Define local knowledge and discuss its importance in ecology and agricultural sector. Provide case studies to write the answer.

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8.8 SUGGESTED READING

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UNIT 9 ENVIRONMENT, CLIMATE AND ENERGY

Structure

- 9.0 Introduction
- 9.1 Learning Outcomes
- 9.2 Environmental Changes and Gender Implications
 - 9.2.1 Climate Change
 - 9.2.2 Food Security
 - 9.2.3 Agriculture
 - 9.2.4 Disasters
 - 9.2.5 Health and Hygiene Issues
- 9.3 Mainstreaming Gender Concerns in Climate Change Discourses
- 9.4 Increasing Energy Burden and Women
- 9.5 Status of Energy Use in Rural Indian Household
 - 9.5.1 Energy Use for Fuel: Macro Picture
 - 9.5.2 Energy use for Electricity: Macro Picture
 - 9.5.3 Traditional Energy Use and its Impact on Health and Environment
- 9.6 Women and Clean and Green Energy Source
- 9.7 Let Us Sum Up
- 9.8 References
- 9.9 Suggested Readings

9.0 INTRODUCTION

The livelihoods of poor rural people, forest-dwellers, fishers, pastoralists and farming communities are closely associated with natural resources derived from the local environment. Because of women's customary roles as food providers and family care givers, their day-to-day experiences have given them a deep knowledge of the environment. and concern for protecting their immediate environment.

Women have also participated in large numbers in movements to protect forests, indigenous seeds, river waters etc, and have sometimes led such movements, for example, *chipko movement*, *beejbachao andolan*, *narmadabachao andolan*.

In this unit, we will discuss the critical environmental issues of climate change and energy conservation through the lens of women and their specific roles. The unit also throws light on the impact of environmental degradation on the condition of women in rural as well as urban areas. Climate change is an emergency and is real. Women bear the greatest brunt of the consequences of climate change. Likewise, the clean energy choices are also less available to the marginalized and weaker sections of the society particularly the women. The day-to-day work of the women is constrained by the limited

energy access and puts additional pressure on them. In view of all these, it is very important to consider the gendered impact of environmental changes taking place.

9.1 LEARNING OUTCOMES

After reading this Unit, you will be able to

- Explain the relationship between environmental change and women;
- Illustrate the impact of Climate Change on Gender; and
- Establish the relationship between Energy security and gender considerations.

9.2 ENVIRONMENTAL CHANGES AND GENDER IMPLICATIONS

Since the beginning of the industrial era, the environmental conditions have been altered because of the emissions taking place in air or pollutants entering the water bodies. Environment related changes taking place in the surroundings impact all people. Women who are more closely involved in farming, tending domestic animals, collecting fuel wood from forest, collecting and storing water etc. may bear the brunt of lack of access to, or deterioration of natural resources. and the consequences of natural disasters. Children and the elderly may also be particularly affected by the fallout of environmental degradation.

For example, in the regions where ground water is polluted by arsenic and used for irrigation of crops and particularly for drinking, arsenic poisoning can affect the skin and vital organs leading to serious and life-threatening illnesses. Health of girls and women is also affected by poor sanitation.

Since, environmental degradation directly affects the life and livelihoods of poor women, they have remained conscious about environmental protection and have been more deeply concerned about nature. As you have already read about eco-feminism and gender-environment debates in the previous Unit.

9.2.1 Climate Change

One of the critical issues of today's times which disrupts the ecological system and poses threat to the survival and livelihoods of various communities is climate change. Climate change is a consequence of anthropogenic factors caused due to fossil fuel burning, changes in land use, and growing urbanization. The consequences of climate change are felt across the globe and by all irrespective of the place or country. The vulnerability of the people towards climate change depends on the geographical location, age and characteristics of the communities. The most vulnerable group comprises of women, children, the disadvantaged and the marginalized communities and the poor living near the ecologically fragile zones. The biophysical and socio- economic vulnerability of women comprising of nearly half of the world population is more than that of men.

Climate Change and Women's Vulnerability

Populations across the world are affected by climate change, but some regions, communities and occupations are more vulnerable than others. The effects of climate change are not gender neutral. Men and women have different adaptive and coping abilities that differentiate their responses towards the climate change and their adverse effects. There is a strong need to look at the phenomena of climate change through gendered lens.

There is no denying that the women suffer the most due to the adverse effects of climate change. Disturbance in the climatic conditions, changes in the weather patterns, scarcity of water and decline in the availability of vital resources not only makes life difficult for women but also poses risk to their health and food security.

In this section, we are particularly focusing on the impact of climate change on women. As climate change puts adverse pressure on natural resources, it brings in extreme weather events and increases the intensity and duration of natural disasters. All these categorically affect the women of all age groups and of all strata of society. Let us discuss these one by one:

9.2.2 Food Security

Climatic conditions driven extreme events will disrupt food security and the well-being of the people particularly. Increase in the land area under cultivation, changes in the cropping pattern and use of fossil fuels in agriculture leads to more emission of carbon dioxide and methane in the atmosphere which triggers climate change. Extreme weather events in the form of unpredictable rainfall and varying temperature disrupt the agriculture. It is estimated that worldwide 50% of the food production in agriculture is done by women either directly or indirectly. Climate change affects food availability, food access and food utilization. The girls and women who normally eat the least and last in the family suffer more in times of climate change. Climate Change will affect the food production which in turn may increase malnutrition among women.

9.2.3 Agriculture

Women constitute major share of agricultural workforce. The 'feminization' of agriculture is also because when males migrate to urban areas, the responsibility of agriculture falls on the shoulders of women in addition to their duties of caregiving and household work. Climate change makes agriculture more difficult. Women also tend to indulge in agricultural activities because they have less access to other earning opportunities. In India, a large number of women are associated with agricultural and allied activities, and as a result they become the greatest victims when climate change strikes. In addition, gender inequality makes them more vulnerable to environmental crisis and natural disasters. For example, climate change affects the fisheries and makes fishing difficult. The increase in the sea level makes the saline water mix with the fresh water. Climate change is reducing the ability to cope up with the changes. With the deforestation increasing, the

collection of firewood and collecting water is becoming increasingly difficult.

9.2.4 Disasters

Women are extremely vulnerable both financially and socially when natural disasters like floods, cyclones or hurricanes occur. Along with children, they suffer the most because of loss of livelihoods, shelter and face difficulty feeding the self and the family. Women are primarily responsible for taking care of the family and providing daily essentials such as food and water, when climate change induced disasters occur, their workload increases and leaving before them no option other than to miss the education and self-development opportunities. A UNDP study conducted in 2007 revealed that in India, girls born during 1970s had 19% less chances of attending primary school. As climate change exaggerates, the poor women and girls are at more risk of losing equal opportunities to participate in development. Climate change brings toll on the livelihoods of the women in coastal areas as for majority of them, paddy cultivation or fishing is the main source of livelihoods.

Climate change affects the parameters of health like clean water, clean air, food availability and safe living. Natural disasters also lower the life expectancy of women. Women are disproportionately affected than males. Physically stressful conditions make it difficult for the women to cope up during floods, storms, typhoons, etc.

9.2.5 Health and Hygiene Issues

Water stress induced due to climate change is predicted to put a challenge on the health and hygiene and sanitation which will adversely affects the health of the women in rural as well as urban areas. Cases of mental health issues, anxiety, domestic violence all are predicted as the indirect consequences of climate change on the women's condition. Most of the work in the fields is done by hand and foot, and so climate induced scarcity of natural resources may jeopardize their health as they are forced to travel long distances to collect water and fuelwood.

9.3 MAINSTREAMING GENDER CONCERNS IN CLIMATE CHANGE DISCOURSES

Adaptation to climate change is determined by technology, wealth and access to information. Women can help in mitigation and implement energy efficient programmes and policies. Energy efficient *chullahs*, household appliances, lighting, along with use of biomass and biogas by the rural women and can also switch to solar energy. Governments should consider the role of women in mitigating climate change.

Financial measures must be made flexible enough to give importance to women's priorities and needs. Allocation of financial resources for climate change including gender sensitive investments must be encouraged. Capacity building and training of female farmers and workers must be strengthened.

The Technological development made so far must be done keeping in mind the women's needs and roles. User friendly, affordable and economically feasible solutions must be proposed by the government. Access to credit information and technology is a steppingstone in this regard.

Governments must also incorporate gender sensitive policies, action plans and other measures to achieve sustainable development. It requires organized gender analysis, obtaining sex-disaggregated data and strengthening gender-sensitive indicators.

Gendered Climate Policy: Golden Rules

- Recognize the vital urgency of gender equality in climate change issues
- Ensuring women's participation in all decisions related to climate change
- Ensure gender mainstreaming in all institutions dealing with climate change
- Collect and publish gender-disaggregated data at every level
- Undertake gender analysis of all climate change policies
- Establish measurable gender related targets
- Develop gender sensitive indicators
- Design outreach, capacity-building education and training programme
- Invest in gender training to sensitize both women and men
- Ensure that adaptation and mitigation strategies support basic human security

Source: Gender CC- Women for Climate Justice

Check Your Progress Exercise I

Note: I. Use this space given below to answer the question.

II. Compare your answer with the Course material of this Unit.

1. What do you mean by Climate Change?

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2. List the gender differential impacts of climate change and disasters.

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9.4 INCREASING ENERGY BURDEN AND WOMEN

You must all have come across the images of women and girls carrying bundles of fuel wood on their heads and transporting the same to long distances. Such pictures clearly depict the necessity of fuel energy and also the role of women in procuring and utilizing the available energy sources.

Energy poverty is characteristic by unavailability or inaccessibility of energy sources. Life of the women could have been much easier and safer had there been no energy poverty and so providing access to LPG, electricity can make their life comfortable. Moreover, the increasing energy burden also deprives them of the other opportunities like education, productive work and creative engagements.

It is often believed that providing energy access is useful in uplifting the conditions of women. However, in reality, it may not always be true. Many times, in the household, the men make decision on the utilization of energy so even if the access is there at several occasions women continue to remain energy deprived. The routine tasks of cooking and other domestic work are hardly aided with any kind of energy support. Many times, when electricity is made available, women are burdened with more work like setting a microenterprise or any small-scale business.

Men members in the family use energy for their leisure and for reducing their workload. Energy access also does not necessarily mean that household work of the women is reduced. On the contrary, in many cases, it is found to be more. To address this issue, energy access design must include women in their plan and execution. All the more, energy access must be linked with other programmes which can boost the economic growth and make women economically independent. The Energy policy is a trade off because of the drivers like economic growth requiring reliable and continuous source of energy, environmental impacts which demand clean and green sources of energy.

9.4.1 Energy Utilisation by Women

While considering the energy utilization, the energy requirements and energy utilization differ between men and women. Gender inequalities are also related to poverty and instability. Access to energy enables economic development. The United Nations has launched Sustainable Energy for All (SE4A) initiative and under this initiative the year 2014 to 2024 is declared as “The Decade of The Sustainable Energy for All”.

We need to explore the linkages between access to energy and women’s economic empowerment. The link between gender inequality and energy access needs to be studied. Electricity is the base of growth, industries, communication and overall economic growth. At the macro-level, power determines the health and well-being of the population. It strengthens livelihoods and boosts economy. At the micro level, it aims to address time poverty, a major constraint in ensuring gender equality. When women and

girls have access to energy, unpaid work becomes time intensive, and they can pursue education and involve in income generating activities.

Several studies have indicated that better chances of schooling and completing primary education is linked to energy access. Even better standards of living and engaging in productive activities, decrease in domestic violence all are linked with energy access. Households with electricity have appliances which reduce the load of women, have television and other media which keep the family informed and use of clean energy sources also makes them less exposed to indoor air pollution.

In one such instance, in the rice belt of Jharkhand, India, the estimated output of women hulling the paddy with an electric huller increased from 20kg to 150 kg in just 4 to 5 hours which shows how time and energy intensive such a manual task is for women. With better results accrued through a motorized huller, those women were able to engage in recreational activities, which also amounted to better health outcomes.

Energy poverty has gender dimensions. In India, collecting water, fuelwood and crop waste can fulfill 92 % of the rural domestic energy needs. Women also face energy related hurdles in formal sectors like access to grid electricity than males. Energy poverty also leads to time poverty. By 2030, indoor air pollution from burning of the biomass is likely to cause 1.5 million deaths annually.

Lastly, women are often not included in the discussions pertaining to energy programs, plans and policies. It therefore results in gender biased planning, execution and implementation of these programs and policies.

Women extended working hours in domestic as well as economic activities range on an average from nearly 11 to 14 hours per day. According to a study, of the total burden of work, women carry out on an average 53% of the work in developing countries and 51% in industrial countries. As compared to male counterparts, women in the rural areas spend long hours for the basic survival activities like collecting firewood, carrying water, cooking food and cleaning. All these activities can be done with less time and energy had there been provisioning of suitable and appropriate access to energy.

According to a study exclusive use of LPG reduces the cooking time by 37 minutes and firewood collecting time to 24 minutes. Together, it saves approximately one hour every day. This saved time can be used by women for some creative work. Further, electrification in villages reduces the probability of developing cough by about 35–50% in non-smoking men and women across both rural and urban households. The lack of access to modern forms of energy is termed as Energy Poverty. Energy poverty deprives women and girls of their “me” time. They do not get any time for relaxation and leisure after long hours of working. The energy burden, confines women to their homes and prevents them from actively participating in community based social activities.

Box 9.1: What is Energy Poverty?

It implies lack of access to adequate modern energy services to meet basic household needs (e.g. cooking, lighting) and the lack of basic energy for essential services (e.g. health care, schooling, income generation) (UNDP 2011). Poverty often means to limited access to energy (Cecelski, 2000). Use of biomass is the indicator of poverty and vice versa. According to Cecelski (2000) energy poverty means, '*absence of sufficient choice in accessing adequate, affordable, reliable, clean, high quality, safe and benign energy services to support economic and human development*'. Thus the gender issue in energy poverty highlights that higher the economic development, there is lesser discussion gender issues (Parikh 1995).

Source: Pattnaik (2022)

The agriculture and livestock rearing work is performed mostly by women. It is important to know that the agricultural instruments are not at all women friendly. They are not designed ergonomically and cause physical and mental stress while operating them. The farming operations like seeding, thrashing, winnowing, weeding, harvesting, etc. tasks become more complicated. There is an urgent need to do more research on women friendly tools and equipment so as to enhance energy efficiency in the agricultural sector. As per a study conducted by ICAR (2012), a female worker uses her fingertips 522 times, palms 55 times, finer nails 144 times.

9.5 STATUS OF ENERGY USE IN RURAL INDIAN HOUSEHOLD

India faces a serious challenge in providing access to adequate, affordable and clean sources of energy, particularly cooking fuel to a large section of the population, especially those who live in rural areas. However, the recent initiative by the government with the aim to access clean cooking fuel, such as Ujjwala scheme is a welcoming step, which will be discussed in detail in latter session. Access to energy is a key component of alleviating poverty and a crucial element of sustainable human development. Without access to modern and commercial energy, developing countries are trapped in a vicious circle of poverty, social instability and underdevelopment. According to the 2011 census, almost 85% of rural households were dependent on traditional biomass fuels for their cooking energy requirement (Government of India, 2013). The NSSO 2009-10 reveals that around 76% of the rural households are still dependent on firewood for cooking. However, the percentage of LPG use has marginally increased. Further, as per the NSSO Reports (55th, 61st and 66th Rounds), there has been an increase in biomass fuel use in terms of absolute quantity consumed over the past decade among rural households (Government of India, 2013). While a larger share of population resides in rural area, a further larger share of them as poor, who face the burden of energy poverty; thus showing economic poverty leads to energy poverty. This is an area of concern given the considerable health impacts of burning biomass fuels apart from being a hindrance to achieving developmental

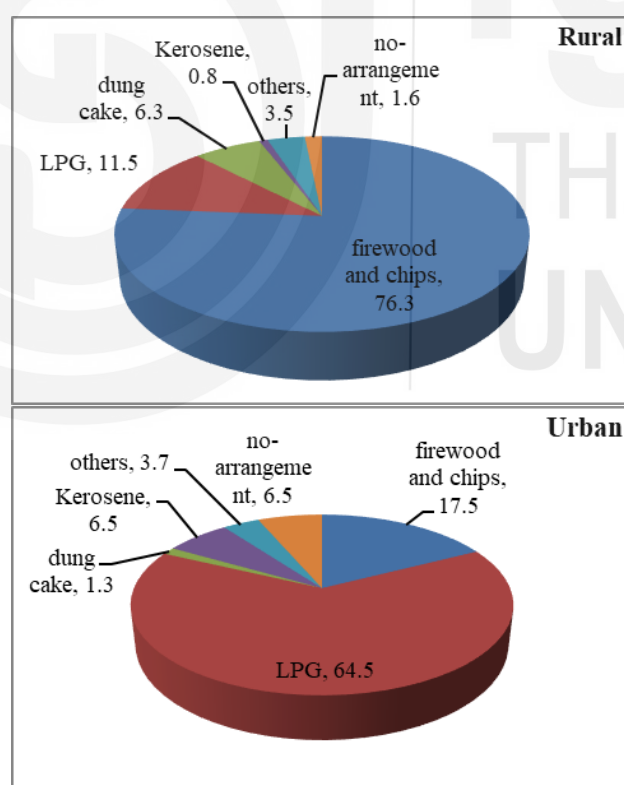
goals, i.e. ensuring a minimum standard of living and provisioning of basic minimum needs.

9.5.1 Energy Use for Fuel: Macro Picture

As per the NSSO (2012) survey data there are mainly 9 types of energy used for cooking:

- Coke or coal
- Firewood and chips
- Liquefied petroleum gas (LPG)
- Gobar gas
- Dung cake
- Charcoal
- Kerosene
- Electricity
- Others

Figure: 1 Sources of Energy Used for Cooking in Rural and Urban India



Source: NSSO, 2012

The figure 1 presents uses of energy for household cooking in both rural and urban India. In rural areas the use of firewood is common. More than three fourth of household depend upon firewood for daily cooking. In urban India, around 65 per cent of households depend upon LPG for cooking compared to 12 per cent in rural area. This shows the dependence on biomass for cooking

is higher in rural area compared to urban, highlighting the wide disparity in access to clean energy between urban and rural.

Box 9.2: Types of Fuel

Biomass or traditional fuel: it is the most used energy source in developing countries. Biomass energy is produced out of - firewood, forestry residue, crop residue like stalks and coconut husks, charcoal, cattle dung and human excrement. Though these are renewable energy sources, the stoves used for burning these fuels are the inefficient 'three stone stoves'. These stoves have an energy efficiency of only 10%, so 90% of the biomass burnt is wasted.

Modern Fuel: LPG, natural gas, kerosene, gasoline etc. Biofuels such as biodiesel, bioethanol and biogas, which are processed from traditional biomass, are more efficient and therefore are also considered to be modern fuels.

Cleaner Fuel: Produces lesser air pollution and fewer greenhouse gas emissions than traditional conventional fossil fuels like coal and oil. For example, solar energy is a renewable free source of energy that is sustainable and unlimited, unlike fossil fuels which are finite. Solar energy is also a non-polluting source of energy and it does not emit any greenhouse gases when producing electricity.

9.5.2 Energy Use for Electricity: Macro Picture

Similarly NSSO (2012) classifies 6 types and sources for energy use for lighting:

- Kerosene
- Other oil
- Gas
- Candle
- Electricity
- Others

Figure 2 presents sources of energy use for lighting across rural and urban area in India. The use of energy apart from electricity and kerosene being lower, all other sources are clubbed under 'other' category. Use of electricity is the major source for lighting in both rural and urban area. Around 33 per cent of households in rural and 15 per cent households in urban area depend upon kerosene for lighting.

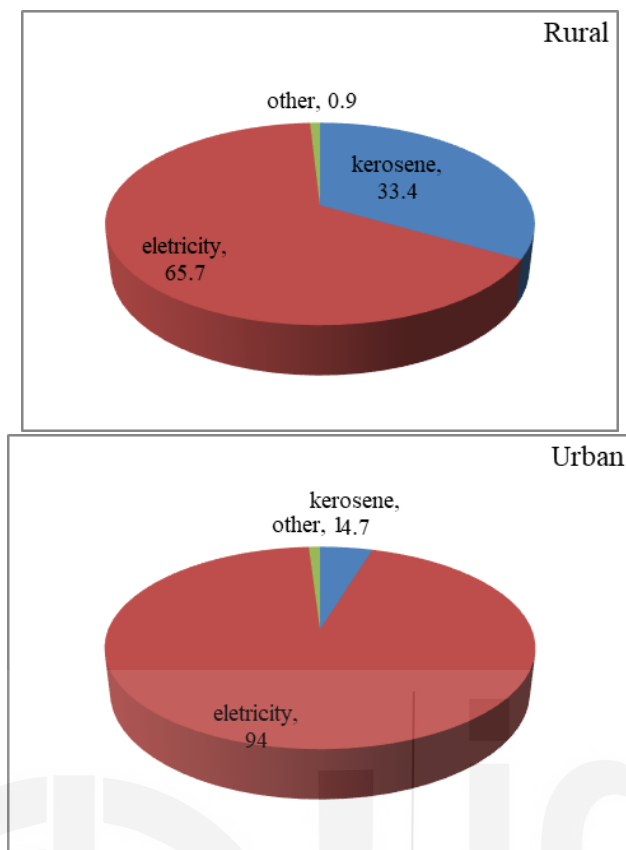


Figure: 2 Sources of energy used for Electricity in Rural and Urban India

Source: NSSO, 2012

The NSSO data shows while there is larger gap in energy access between the rural and urban areas, there is also a wide variation in the energy access between the households at various economic classes. As high as 81 per cent of rural and 59 per cent of urban households belonging to the lowest five percentile classes (based on the expenditure) reported firewood and chips as their primary source of energy for cooking. The uses of firewood decline as one move up in the economic classes. What is striking is that even at the top five percentile classes in the rural areas, around 34 per cent of households reported firewood and chips to be the primary source of energy for cooking. Only around 50 per cent of these households reported LPG as their primary energy source for cooking. This indicated that the problem of energy poverty has been more pervasive than income poverty (Reddy 2000). This section is adapted from Unit 3: Gender and Energy (Women Role in Energy Efficiency) of the course MGS 043: Gender and Sustainable Development.

9.5.3 Traditional Energy Use and its Impact on Health and Environment

Extreme exposure to indoor air pollution, due to use of wood, crop residues, and untreated coal, adversely affect the health of the family as it led to indoor concentrations of important pollutants respirable particulates, carbon monoxide, benzene and formaldehyde (Smith 1987). Because most of the cooking is done by women, they are disproportionately affected by household air pollution (HAP) caused by the inefficient burning of solid biomass cooking fuels. Exposure to this high pollution load from burning biomass

fuels is regarded as one of the most crucial environmental and public health problems in developing countries. This is critical for women who cook use those fuel for cooking (Mondal 2014). There is highly possible that young children who attend to the fires or stay close to their mothers during cooking are worse affected. The seriousness of these impact are invisible as Reddy and Nathan (2012) mentioned “*indoor air pollution acts as a slow poison in the kitchen and affects the health of women, who are at the bottom of the family health priority, these impacts are considered unavoidable yet unnoticeable*”. Various studies analyzed the impact of energy use and health impact and shows that women exposed to indoor smoke are three times more likely to suffer from chronic obstructive pulmonary diseases (COPD) such as chronic bronchitis or emphysema compared to women who cook with electricity, gas or other clean fuel (Malla, 2009; Naeher et al., 2001).

Another critical impact of biomass is it effects the environment. The smoke that produced while cooking consists of black carbon and potent greenhouse gases: carbon dioxide and methane. Also, the use of firewood for cooking cause forest degradation due to continuous extraction of wood. It ultimately lead to deforestation, decline in biodiversity, soil degradation, indoor air pollution and GHG emission. The agricultural waste and cattle waste are also used for cooking in rural area. Burning of cattle dunk as fuel leads to loss of organic matter and nutrients which affects crop production (Ravindranath and Rao 2012).

9.6 WOMEN AND CLEAN & GREEN ENERGY SOURCES

On a larger level, we know that energy increases the productivity of employees and makes industries to thrive and manufacture. Transition moves from kerosene oil to improved cooking stove to solar cooker shows the journey towards clean source of energy. Clean sources of energy like solar helps to increase the income and the confidence of the women.

Strong support should be given to women to develop and adopt green and ecofriendly technologies which are non-polluting and renewable. Further, energy policies and programmes need to be gender sensitive. In this direction, a lot of work has been made in recent decades to achieve gender equality, but women are still very less likely to have access or control over economically important and productive natural resources and do not have access to modern technologies.

As consumers and beneficiaries of energy, women are responsible for the designing of household energy technologies. Improved energy programs initiated by the Governments have been more effective and more beneficial when women stakeholders are involved in product design and providing services. Women entrepreneurs use renewable energy to maximize profits to increase efficiency in the informal sector enterprises, and with suitable training and support also help in the production of green energy sources. For example, women effectively operate and maintain biogas, hydroelectric and solar installations. The initial investment costs in these projects are higher and because of lack of women's training and restricted movement, the

efficiency falls below the standards.

However, as entrepreneurs, leaders, managers and task managers, women have effectively influenced energy policy decisions and successfully managed the projects at the local, national and international levels.

Despite clean energy being a sustainable form of energy, between long-held policy goal of Indian governments, between 2005 and 2011, only 9% of households made a complete transition to clean energy, and 16.4% made a partial transition.

Women also make more sustainable consumption choices. However, Sustainable energy improves the reach and quality of energy services in the developing countries. Two third of the global green-house emissions are because of the improper energy use. In South Asia alone, more than half of the carbon particles emitted are because of inefficient cooking and use of traditional fuels.

9.6.1 Role of Women in Renewable Energy Sector

The transition from fossil fuel to renewable energy facilitates economic development and alleviates poverty. The Sustainable Development Goal 7 states, Sustainable Energy is linked to Sustainable Development Goal 5 related to Gender Equality. The current trends indicate that women are more inclined towards the use of renewable energy as compared to the conventional forms of energy. The much-needed emphasis on energy security and access. In the wake of energy poverty, the poor continues to burn fuel and use polluting sources of energy. It deprives women to adopt energy efficient technologies.

Access to clean, affordable, reliable and sustainable energy is also a tool for the empowerment of women and makes a difference to their health and well-being. Indoor pollution is also a leading determinant of women and girls' health. Every year millions of women die because of indoor air pollution.

There are certain barriers which hinder the path of renewable energy sector. Fire wood collected from the forests and the commonly available fuel in rural households for which the rural woman possesses the traditional Chullah which causes health hazards to them. Making energy services available to women served as a starting point on the road to gradual and eventual empowerment and resultant social transformation. Introduction of energy saving and drudgery reducing devices like improved and smokeless chulha, water heating devices, pressure cooker, metallic stove, biogas, LPG etc, would help to address different energy needs of different households.

Adopting gender perspective for promoting renewable energy development is important to ensure that the contributions of women in the form of their skills and capabilities are made part of the economic development. Meanwhile, gender diversity in energy sector also brings substantial co-advantages. In the energy access framework, engaging women as active agents in promoting clean and green sources of energy can improve sustainability and gender equality in the long run.

Check Your Progress Exercise II

Note: I. Use this space given below to answer the question.

II. Compare your answer with the Course material of this Unit.

1. What are the different types of fuel that women use?

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2. Define energy poverty.

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9.7 LET US SUM UP

Mainstreaming of a gender perspective in the environmental protection is crucial. Yet, detailed account on the status of the role of women in this area remains sparse and not much explored.

Environmental issues are seen from the gendered lens in this unit. While most of the important issues like climate change and energy security pose challenge to all countries but the half of the population which significantly influence environment by their day to day decisions are discussed elaborately.

Everyday women make so many decisions which influence the environment. In view of this, providing them access to clean sources of energy and better working environment can help to minimize the adverse effects caused due to environmental degradation. Environmental problems affect men and women differently. Several studies indicate that climate change induced weather extremes and natural disasters bring in more hardships and struggle for the women. The unit explores all these issues and stresses on the need to include gender considerations in policy framing and strategies while defining environmental protection.

9.8 REFERENCES

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9.9 SUGGESTED READINGS

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