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ENVIRONMENT AWARENESS AMONG WOMEN IN UTTARANCHAL



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Who is responsible for climate change? Are there gender differences and what are the reasons for these differences? Are men and women differently aware by the effects of climate change? Are there gender differences in thinking process and decisions on environment awareness policy? How and what extent are women contributing when it comes to working out and deciding about environmental awareness programs?

Why Women? Women are specially able to be injured to climate because they are more leaned towards the contrary collision from climate change. They have limited adaptive capacities that come to notice from prevailing social inequalities and endorsed by social and economic roles. The essential goal of adaptation strategies is the lessening of the vulnerabilities to climate induced change in order to protect and raised the livelihood of needy people. Vulnerability is distinguished by gender issues such as wealth, technological power and access to information, prime discussion areas for women, and making it suitable adaptation to climate change. Women, especially those pregnant, are particularly susceptible to several environmental risks, particularly women living in rural or marginal suburban areas in developing countries. In those situations, women have less choices about the kind of lifestyle they want to live and fewer opportunities to change unsatisfactory conditions and improve their families and their own health. Because of their roles as home-makers, need providers, and their role in reproduction, women are easily affected to health problems and hazards in several situations. The reproductive system of pregnant women is especially vulnerable to environmental contaminants. Every step in the reproductive process can be changed by toxic matters in the environment.

These toxic matters may increase the risk of abortion, birth defects, fetal growth retardation, and death. Although for a long time women have been considered passive recipients of aid rather than active participants in development, their role is crucial both to the economies of the developing countries and to the future of the environment.

Conservation of resources : Current Need

Climate is influenced by light, temperature, humidity, wind etc. Climate change brings many consequences like changes in the species composition, occurrence of floods & droughts etc. One of the most important changes in climate is increase in the atmospheric temperature & its effects. This is called global warming. As per the report of the UN's Intergovernmental panel on climate change the building up of greenhouse gases has risen by 70 percent since 1970 and could rise to an additional 90 percent by 2030 if efforts are not made to cut down on the emissions. The global temperatures are rising. The alarm for calamity has begun unless all the people take urgent lawsuit to reduce the emission from origin. Mindless wastage of resources has raised environmental degradation to dangerous level. The need for creating awareness among people is necessary today. Peoples' attitude towards their environment determine to a large extent. Lifestyle affects the environment. If people are aware of the environment and its significance, they will act in an environmentally responsible manner & support.

Due to global warming glaciers will melt rapidly which will consequence in having very little water in rivers. Due to shrinking of Ganga river famines will cause which will force people to migrate from their roots. Global warming will cause millions of 'ecological refugees'. When the glaciers shrink &

recede the source of hydel power will vanish and may cause changes in the consumption patterns in the economy. Needless to say that shrinking of rivers and rise in temperature will dangerously affect agriculture, water resources and socioeconomic factors in the next couple of decades. Natural resources are the basic goods & services that sustain human societies. Human beings are entirely dependent upon earth's natural resources; the combination of growing populations & increasing levels of resource consumption is now degrading and depleting the natural resource base. Conservation thus entails actions to use these resources most efficiently and thereby extend their life as long as possible. Renewable resources can be seriously depleted if they are subjected to excessive harvest or otherwise degraded and no substitutes are available water, wood are the example of it. When the misuse of biological resources causes the complete extinction of a species or the loss of a particular habitat, there can be no substitute for the esthetic and moral values that many people associate with that diversity of life.

Current overuse and misuse of renewable living resources cannot be sustained and poses significant economic costs to societies. A critical element of ensuring a sustainable biosphere is one that continues to provide the goods & services from living systems upon which society depends is thus the conservation of natural resources. "Conservation" is sometimes used synonymously with "protection". More appropriately it refers to the protection and sustainable use of resources. Effective conservation of natural resources includes sustainable resource management, establishment of protected areas and off-site conservation. Energy being an important element of the infrastructure sector has to be insured its availability on sustainable basis. On the other hand, the demand for energy is growing manifold and the energy sources are becoming scarce and costlier. Among the various strategies to be evolved for meeting energy demand, efficient use of energy & its conservation emerges out to be the least cost option in any given strategies, apart from being environmentally benign. The steps to create sustainable energy system begin with the wise use of resources; energy efficiency is the mantra that leads to sustainable energy management. Energy Demand & Supply: On the energy demand & supply side, India is facing severe shortages. 70% of the total petroleum product demand is being met by imports, imposing a heavy burden on foreign exchange. Country is also

facing peak power & average energy shortages of 12% to 7% respectively. To provide power for all, additional capacity of 1,00,000 MW would be needed by 2012 requiring approximately Rs.8000 billion investment. Further, the per capita energy consumption in India is too low as compared to developed countries, which is just 4% of USA & 20% of the world average. The per capita consumption is targeted to grow to about 1000 KWh per year by 2012, thus imposing extra demand on power system. In a scenario where India tries to accelerate its development process and cope with increasing energy demands, conservation and energy efficiency measures are to play a central role in our energy policy. A national movement for energy conservation can significantly reduce the need for fresh investment in energy supply systems in coming years. It is imperative that all out efforts are made to realize this potential. Energy conservation is an objective to which all the citizen in the country can contribute. Whether a household or a factory, a small shop or a large commercial building, a farmer or a office worker, every user & producer of energy can and must make this effort for his own benefit, as well as that of the nation.

OBJECTIVES OF THE STUDY The general notion of green world came into the minds of people after the dangerous loss caused by global warming. Global Warming refers to an average increase in the Earth's temperature, which in turn results changes in climate. A warmer earth may conduct to changes in rainfall patterns, a rise in sea level and an alert series of impacts on plants, wildlife and human being. When Scientist talks about the issue of climate change their anxiety is about global warming reasoned by human activities. Thus one can conceive the fact that what loss we human can cause to the earth by being careless & ignorant. The dangerous consequences of global warming have forced alert people to think on various initiatives to save the environment. The concept of green has got recognition now. "Green Campus" is totally environment friendly campus. Campuses of educational institutes contribute to serious environmental problem because of excessive consumption & wastage of energy and other natural resources. Students and teacher community plays an important role in conservation of environment. Teachers and students are considered to be at the forefront pursuing the actions on environment awareness whether acting as individuals inspiring

environment perspective into society or collectively nourishing environmental awareness. In order to perform this challenging role effectively, there is every need to find out how much awareness school teachers and students have about the environment, what is the level of concern and what can be done for this perspective. There is a close connection between energy use in building and actual requirement. It contributes in environmental damage because there is no thought for energy conservation. The objective of this study is -

LITERATURE REVIEW Alam(2005) provided information on environmental pollution and health hazards. Ali M.(2008) studied that the earth is warming because of human activities affecting the environment. Bhandari, R.K. and Gupta C. (1985) studied various environmental aspects in Problems of Landslide in the Himalayas and future directions. Brahma (2009) studied that global warming may be influenced by an individual contribution and by burning of fuel (energy) crossing the boundaries of minimum requirements of total carbon content of fossil fuel. He mentioned that third world countries will be seriously affected due to vast use of coal and agro cellulosic residue as fuel and thereby for generating more harms to environment. Chi.Zhang(2001) Focused on impacts of global warming in the electricity sector specially in China. Coffin(2003) studied the intense weather extremes associated with global warming in the atmosphere and oceans create conditions favourable to clusters of disease outbreaks. Dalrymple, Theodore(2007) cited several possible causes of global warming in Britain and lack of awareness of young British students regarding global warming.

Few. R. (2007) Health & Climatic hazards: Framing social research on vulnerability, response and adaptation, Global Environmental Change. Gregg (2008) highlighted the motto as an instrument that inspires businesses and consumers to change their personal and commercial practices that pollute the environment and add to global warming. Kainath G.S. (2009) studied Environmental Awareness among school teacher at different levels. Kartrowitz(2007) studied that how explaining environmental issues to young children can sometimes cause anxiety. Though awareness is important but frightening children causing under stress. Mathew (2007) described the process of extracting ground source energy using an electric compressor pump as well as the ways of minimizing

the impact of global warming. They study is about conversion of green energy. Conservation and reuse of water and minimization of recycling waste. Nicholas (2006) presented an overview on the impact of global warming in the U.S. and the response of various businesses on the situation. Pelham Gallup(2009) reveals the extent to which world citizens vary in their knowledge about global warming and its causes. Prasad A.K. and Singh R.P. (2007) studied Changes in Himalayan Snow and Glacier Cover between 1972 and 2000. R.,Nordhaus, W, Shaw (1994) studied 'The Impact of Global Warming on Agriculture based on Recardian analysis Richard(2008) reported that increased awareness of environmental impact will be a major trend for electronic industries in 2008. Y. Xiaolin, F. Lihong & D. Xuming (1998) study focuses on Public Environment Awareness in China. They analyzed results of public survey.

SCOPE OF THE STUDY This study is restricted to a group of teenage girl students and female teachers in Nainital area of Kumaun region in Uttarakhand Hills.

Research Methodology & Scope: The study is mainly based on exploratory research. A set of questionnaire was prepared to collect primary data. 196 samples have been collected for this purpose. Study is based on environmental awareness aspect of a girls school and suggests the environment sustainability measures which will make people aware of the major environmental awareness issues & suggest them the ways to practice these measures within the campus and in their personal life.

LIMITATIONS The sample may not be a true representative of the entire population. It is limited to information provided both by primary and secondary data. The cooperation of the respondents limits the study.

GLOBAL WARMING AND EFFECTS TO HUMAN HEALTH Global warming expresses today that earth's biophysical & ecological system is altering. It is also evidenced by stratospheric ozone depletion speeding bio-diversity losses which will result on terrestrial & marine food producing systems, depletion of fresh water suppliers and the global dissemination of persistent organic pollutants. The weather has a straight collision on our health. Heat stress could have outcome in heat cramps, exhaustion, stroke and damage physiological functions, metabolic processes and immune systems. The first noticeable change in human health may well be alterations in the geographical range

and seasonality of certain infectious diseases including vector borne infections such as malaria, dengue fever and food borne infections which increases in the hotter months. Due to climate change some of health outcomes noticed such as water borne diseases as natural disaster and risk of malnutrition also occurs. Respiratory & Cardiovascular, stress related problems increases commonly.

Climate change is supposed to affect malaria indirectly by changing ecological relationship that is important to the vector, parasite in the malaria transmission. Efficacious collision of climate change burdens the societal health by various ways. There are wide cases of malnutrition & micronutrient deficiencies. Roughly 47% children are underweight, 79 percent children from infancy to 3 years of age are anemic. 58 percent pregnant women of age 15 to 49 are anemic. 56 percent married women of 15 + 49 age are anemic and even 24% of men 15-49 years married are anemic. Climate change worsens air quality raising actions to more weather events which increases food, water & vector borne infections and enhancing heat stress conditions. Polluted air causes asthma or the risk of developing asthma. Warmer climate & increasing population means more expectations for energy requirements. Society will meet this demand by burning more fossil fuels to create the electricity needed to power conditioners. This would follow as outcome in increased concentration of all major air pollutants including ozone.

WOMEN & ENVIRONMENT Women have a unique role to play in addressing the problem of environment, in their position in charge of households, and as consumers and guardians of natural resources. Efforts to tackle climate change must take into account the needs of women, who will be among the hardest hit by warming temperatures across the world. In order to ensure their own health, and that of their family and communities, women really need to manage & influence environmental policies. There is growing awareness of the need to make women contribute to the identification of environmental problems as well as in the planning of activities geared at the sustainable development of their communities. Industrial growth of past 200 years has been responsible for increasing levels of pollution and for the degradation of air, water and land. In addition to unrestricted exploitation of natural resources, unsound agricultural practices have made devastating effects on the environment and on

people's health & quality of life. Women & Children have been particularly affected. Women are particularly susceptible to several environmental risks, particularly women living in rural or marginal suburban areas in developing countries. In those situations, women have few choices about the kind of life style they want to lead and fewer opportunities to change unsatisfactory conditions and improve their families & their own health. It could be seen from the table1 that all the persons surveyed were well aware of the fact that environment consists of all i.e.air, water & land. Global warming is a known issue today. There are various environmental issues. Respondents were asked about various environmental issues.

Table(2)clearly shows that 36% people are aware about global warming as the major environmental threat. 36% females feel that deforestation is the reason whereas 29% females feel that population increase is the cause of major environmental threat. Water is the main source of life. Often it is misused also. The respondent were asked about current scenario of drinking water on earth. Table (3) indicate that around 36% females understand that there is scarcity of drinking water which suggests that only these many people might be practicing water conservation. 59% females feel that water is enough to survive. Even 5% females feel that it is abundant. We need to make every female aware about scarcity of drinking water & ways to conserve it. There are different sources of energy. Females knowledge about different sources of energy was inquired.

Table (4) depicts that majority of females are aware about energy and its different sources which reflects the awareness about energy sources. Use of transport mainly depends on how much distance office & school has. Normally in hill areas people prefer walking due to non-communication of vehicles and distance is comparatively lesser. Respondents were asked about distance of school from home. 41% of respondents are staying within ½ km of the school or college. 18% females are staying more than 2 km. of distance. 26% respondents staying within 2 kms distance and 15% respondents staying within the distance of 1 km. Locally various modes of transport is available in the town. Rickshaws are available from Tallital to Mallital which covers the distance of 1 km. Besides that school vans, taxi, motor cycles and personal cars also used for transportation.

Table (6) shows that there are more than 91%

people who come walking to school and colleges, which is a good practice. Only 5% females use cycle rickshaw which is available from Tallital to Mallital area. 2% use school van & motor cycle respectively. Walking is a good exercise to maintain health. People living in hill areas are quite habitual of walking its immediate effect in environment is that it do not cause pollution and fuel cost is saved. Computer education plays an important role in analyzing an individual status with the modern education. To find the education level of the respondents' data were collected and tabulated as below-

Table 7(a) shows that only 40% of female respondents use computer. 60% respondents do not use computer. Computer knowledge and frequency of use is the need for today. To know the extent of use of computer opinion of teachers and students were taken and tabulated. Any electronic equipment consumes energy while in use. To know the efficient utilization of computer data were collected and tabulated. Respondent were given various options and their opinion was taken.

It is inferred from the table that 28% respondents shut down their computer when they are away for 20 minutes. 10% respondents keep in stand by mode. 23% respondents keep it in screen saver mode. 38% respondents turn off their monitor when they can easily hibernate the system as it did not take much time to reboot the computer if it is hybernated. Study shows that respondents are not aware of hibernation. Keeping the system on standby mode or turning off the monitor or using screen saver, still leads to power consumption which can be easily avoided by hibernating the system. The effective use of electricity is the need for today. Each one needs to be aware about the use of light and energy equipment.

Table (8) shows 100% awareness towards switching off the lights and heaters when they are unnecessarily on.

Type of lighting used at home Energy conservation is another important aspect. New inventions and innovations are taking place in the field of providing various household equipments which consumes less energy. Households should be familiar about the equipments available in the market.

This deduced from table (9) that respondents were asked about various options of use. Respondents using CFLs constitute 51% which is beneficial both environmentally and economically. 13% respondents

didn't answer this question shows an ignorance aspect about energy use. 17% respondents use bulbs at home. 18% respondents use tube lights. Modes of heating / cooking food Various cooking and heating food sources are available in hills. It is inferred from the table 10 that 92% respondents use gas stove. 2% respondents use electric heater and coal heater respectively. 4% respondents use microwave. Respondents have to be made aware about using environment friendly ways of cooking as cooking on heater should be strictly avoided. It consumes very high energy. Use of hot water for bath Due to cold climatic region use of hot water is frequent. The respondents were asked about the use of hot or cold water. It is evident from table(11) that 88% respondent use hot water for bathing. Only 12% respondents do not use hot water for bathing. Since majority of the respondents use hot water. The mode of use to heat water is an important indicator to calculate energy consumption.

Ways to heat water

It is inferred from the table (12) that 28% respondent use geyser to heat water. 26% respondents use emulsion rod to heat water. 15% respondent use coal heater. Only 2% respondents in the study use solar heater. Respondents using geyser and emulsion rod should be educated that it consumes very high energy. Solar heater should be promoted instead of gas heater as it helps in saving power consumption. There are various sources of heating and cooking food are available. The respondents were asked about dependency of gas stove.

It is deduced from the table 13 that 81% respondents depend only on gas stove for heating and cooking of food. 24% respondents do not depend on gas stove. Respondents preference was inquired for various types of energy sources to warm houses and cook food.

POLICY SUGGESTIONS

A woman has a critical role as managers of water, electricity and environment health. Environment damage affects more to women. Also, women are more environmentally aware than men, more likely to be doing something about climate change but also more likely to suffer from its effects. They spent more time in arranging and handling with energy equipments & that have a direct impact on climate change. Whether cooking food, heating water, washing clothes or warming the house. Women are believed to hold the

way to controlling household carbon emission across the world. The Kumaun women are playing an important role in maintaining households & in managing natural resources. There is need for research to study the environment awareness among women taking into account a variety of phenomenon such as utilization of electricity, misuse, alertness to conserve energy etc. Though men & women are likely to face common challenges but their capacity to react, to adapt or to change will not be the same due to their different positions in society. It is important to understand better what challenges women are facing, they may be more thoughtful and improve the preparedness and safety of all household members. Endemic shortages of fuel, water, electricity and gas all over the country are the effects of a severe energy crisis and they particularly affect women's work. Developing environment friendly technologies is becoming a necessity and must reduce women's workload. The improved technology can reduce women's work load and improving health conditions including the introduction of biogas,

FINDINGS OF THE STUDY

Table (1) : The understanding about the basic concept of environment was inquired.

Meaning of Environment	No. of respondent	Percentage
Air	0	0%
Water	0	0%
Land	0	0%
All the above	196	100%
Total	196	100%

Table (2) :

Meaning of Environment	No. of respondent	Percentage
Air	0	0%
Global Warming	70	36%
Deforestation	70	36%
Increase in Population	56	29%
Extinction of endangered resources	0	0%

Table (3) :

Sources of Water	No. of respondent	Percentage
Abundant	10	5%
Scarce	70	36%
Enough to survive	116	59%
Don't know	0	0%

Table (4)

Sources of Energy	No. of respondent	Percentage
Wind	02	1%
Thermal	-	-
Hydro	-	-
Solar	-	-
Nuclear	-	-
No Answer	12	6%
All the above	182	93%
Total	196	100%

improved cooking stoves, solar cooker & heaters. If these technologies are widely available to women it can make big difference in raising their efficiency level. Climate change affects people's living conditions. Since women are traditionally responsible for and concerned with the well being of all family members. They might have a different perspective and innovative ideas for helping people to cope with climate change effects.

CONCLUSION

Thus from the analysis, it can be concluded that there are still miles to go before females/women become totally aware of their own contribution towards damaging the environment. Everyone has to take initiative and start acting as responsible citizens because every small step taken by an individual makes a lot of difference. The major issue is that there is lack of awareness towards the environmental issues & energy use and without awareness no one is going to think about the future generation and the environment in which they will have to survive only then they will

Table (5)

Distance (km)	No. of respondents	Percentage
½ km	80	41%
1 km	30	15%
2 km	50	26%
More than that	36	18%
Total	196	100%

Table (6) :

Modes of transport	No. of respondents	Percentage
Richshaw	10	5%
School Van	4	2%
Taxi	0	0%
Motorcycle	4	2%
Personal Car	0	0%
Walking	178	91%
Total	196	100%

Table 7

Response	No. of respondents	Percentage
Yes	78	40%
No	118	60%
Total	196	100%

Table (8):

Use of Electricity	No. of respondents	Percentage
Switch off	196	100%
Leave as it is	0	0%
Total	196	100%

Table (9) :

Types of equipments	No. of Respondents	Percentage
Bulb	34	17%
CFL	100	51%
Tube lights	36	18%
N.A.	26	13%
Total	196	100%

Table (10) :

Options	No. of respondents	Percentage
Gas stove	180	92%
Kerosene	0	0%
Heater E	4	2%
Firewood	0	0%
Coal Heater	4	2%
Microwave	8	4%
Total	196	100%

Table (11) :

Type of water	No. of respondents	Percentage
Yes	172	88%
No	24	12%

Table (12)

Type of use	No. of respondents	Percentage
Solar Heater	4	2%
Geyser	54	28%
Emulsion Rod	50	26%
Gas	34	17%
Firewood	30	15%
Coal heater	0	0%
Total	196	100%

Table 13

Mode – gas stove	No. of respondents	Percentage
Yes	158	81%
No	48	24%
Total	196	100%

think about sustainable measures for the betterment of the environment. There is urgent need to stop overuse and misuse of renewable resources. Conservation is necessary. Due to cold climate the demand for energy is manifold and the energy sources are becoming scarce and costlier. Among the various strategies adopted to be evolved for meeting energy demand efficient utilization & its conservation is the least cost option.

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The ways to create sustainable energy system begins with the wise use of resources; energy efficiency is the basic rule that leads to sustainable energy management. Every woman can contribute in energy conservation whether a household or working must make this effort for efficient energy utilization.

To have efficient utilization of resources awareness is must. For creating awareness both teachers as well as students and office administration members role is must. Switch inoff the lights & room heaters. Avoid bulbs. Educating everyone to use CFL Lights. Use of emulsion rods should be avoided. Waste wood collected from the forest can be utilized to warm houses. Paper should not be burnt. People should be educated for selling it to raddiwalas. In school/colleges paper shredder should be bought so that paper burnt can be shredded and be recycled. Segregation of waste is must into wet and dry waste. Dry waste should be further segregated and according to the type it can be recycled. Creation of pit for vermi-culture composting can be very useful where the wet waste from the school/ college canteen & household wet waste can be decomposed for manures and which in turn can be used for gardening and plantation purposes as people really like to do plantation in hill areas. One important aspect which has observed in the study is that people are aware about environment pollution and many of them have stopped using plastic bags. Celebrating earth day once in the academic year is must where environmental issues like global warming, distinction of endangered species, effective utilization of energy and sustainability measures should be discussed. The idea behind organizing such events is to make individual have competitive feeling in saving the environment. Field trips, competitions can also be arranged.