



## Awareness on renewable energy towards ensuring sustainable rural development: Need for social work intervention

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### Abstract

Recent public concern over the environmental pollution and using renewable energy were frontline issues. Environmental issues are increasingly acknowledged as a concern for the social work profession. Hence this paper examines the awareness towards renewable energy in bringing sustainable development and also explores the need of social work intervention. The present study was carried out in Shimoga district of Karnataka state. Descriptive research design was deployed. Simple random sampling technique was adopted with 60 respondents as sample size. Data collection was done through personal interviews with structured questionnaire and analysis. Analysis was carried out by applying simple statistical percentage method. The study found.

**Keywords:** sustainability, rural development, renewable energy

### Introduction

Energy is the most important component for development in a country. It plays a vital role in human welfare as all important activities of development are dependent on the use of energy. It is one of the indices of the measurement of prosperity in a country, which is often being used by the per capita energy consumption. Across the world participatory approaches to development such as asset based and livelihood approaches have moved from locally successful projects into scaled up programmes promoted by local regional government and international agencies such as the World Bank (O'leary, 2006). Energy is required to fulfil the basic needs of a human being like food, shelter, clothing, health, sanitation and education, etc. In rural areas energy is mainly used for cooking, heating and lighting purposes. The energy demand for the cooking is the most common in rural household sector. Most of the rural households are using firewood, vegetable and agricultural waste, and dung cake for cooking purposes. On the other hand majority of the households use kerosene for lighting purposes.

### Sustainable Development

The term "Sustainable Development" has come to indicate a process by which development occurs without harmful side effects to the environment. "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Bruntland 1987) "Sustainable Development is the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable. Sustainable development involves more than growth. It requires a change

in the content of growth to make it less material- and energy intensive and more equitable in its impact. These changes are required in all countries as part of a package of measures to maintain the stock of ecological capital, to improve the distribution of income, and to reduce the degree of vulnerability to economic crises.

### Renewable Energy

Renewable Energies are energy-providing technologies that utilize energy sources in ways that do not deplete the Earth's natural resources and are as environmentally benign as possible. These sources are sustainable in that they can be managed to ensure they can be used indefinitely without degrading the environment (Association, 2009).

### Types of renewable energy

#### Hydro Energy

It is a renewable energy resource because it uses the Earth's water cycle to Generate electricity. Water evaporates from the earth's surface, forms clouds precipitates back to earth, and flows towards the ocean. The movement of water as it flows downstream creates kinetic energy that can be converted into electricity. Hydropower is by far the single largest renewable energy source in India, accounting for over 10% of total electricity generation. The energy of running water has been exploited for very many years.

#### Wind Energy

Wind power is the conversion of wind energy into a useful form of energy, such as electricity, using wind turbines Defects: The level of required subsidies, the small amount of energy needs met, the expense of transmission lines to connect the wind farms to population centres, and the uncertain financial returns to wind projects make it inferior to other energy sources. Intermittency and other characteristics of wind energy also have costs that may rise with higher levels of

penetration, and may change the cost-benefit ratio.

Nuclear Energy generates less than 3 percent of India's total electricity consumption. Nuclear energy is generated in a nuclear reactor when nuclear fuel (uranium 235) kept in the reactor core is split up, releasing huge amounts of heat. The heat is used to produce steam, which in turn is used to drive a turbine to generate electricity.

Biogas energy is the utilization of energy stored in organic matter. Examples of biogas include wood, leaves, animal waste, crops, bones and scales. The abundant plant life in our planet is nature's store house of solar energy and chemical resources. Whether cultivated by man or growing wild, plant matter represents a massive quantity of a renewable resource that we call biogas

Tidal and ocean energy Tidal electricity generation involves the construction of a barrage across an estuary to block the incoming and outgoing tide. The head of the water is then used to drive turbines to generate electricity from the elevated water in the basin as in hydroelectric dams.

Thermal power Thermal power is one of the oldest methods of generating power. The reasons identified for poor performance of thermal stations includes the following Design deficiencies, manufacturing and generic defects. The quality of coal being supplied had deteriorated as compared to the deigned quality. Besides the coal had high ash content and contained stones, boulders, shale and sand.

### Benefits of solar energy system

The ecological benefits of using solar energy are just too many to enumerate. First and foremost there is tremendous environment edge that comes from its clean, renewable, non fossil fuel oriented and sustainable nature. Solar power system helps in keeping the environmental balance of the world intact. Solar energy avoids usage and release of gases. It remains eco-friendly does not brings risk of global warming. The harmful smog or acid rain generated by fossil fuel sources is used is also not an issue when solar energy is used. Most of the world's energy sources are derived from conventional sources- fossil fuels such as coal, oil, and natural gases. These fuels are often termed non- renewable energy sources. Although the available quantity of these fuels are extremely large they are nevertheless finite and so will in principle "run out" at sometime in the future. Most forms of energy production create some form of negative externality. These costs are not paid by the producer or consumer of the good. (Mury Anbumathy M Jesundoes manohar D P, 2014) [9].

### Rationale of the study

As Kahn observed (2001) [6], there is a need to study renewable energy sitting 'from different scientific disciplines and theoretical perspectives, in order to develop a more structured understanding about renewable energy. Empirical studies tend to show high levels of public awareness towards renewable energy (Devine-Wright, 2007) [3]. While in India, there is a paucity of empirical studies. Therefore the present paper attempts to assess the level of awareness among the rural community people in Shimoga district and to explore the need of social work intervention in this field.

### Objectives of the Study

1. To know the awareness level of renewable energy among

the rural people

2. To know the attitude towards usage of alternative energy by rural people
3. To explore the social work intervention for sustainable rural development through renewable energy at rural area.

### Research Methodology

The present study was carried out in Shimoga District. Descriptive research design was deployed. Random sampling technique was adopted by choosing 60 respondents selected as sampling size. The data collection was done through personal interviews and through the structured questionnaire. For the present study both the primary and secondary data were collected. The primary data collection was done through personal interviews and through the structured questionnaire. Analysis was carried out by applying simple statistical percentage method.

### Result and Discussion

Following are the important results and discussion based on the primary data that have been collected by the researcher for the purpose of the study.

#### Awareness towards the renewable energies

- Majority 78 per cent of the respondents were farmers who are holding above 5 acres of land and rest 12 per cent of them were small farmers who holds below 5 acres of land. This 70 per cent of farmers were satisfied with agricultural activities income and the famers who hold below 5 acres they were working as labours com agriculture farmers in their and other farms.
- Majority 64 per cent of the respondents were aware about renewable energies and rest 36 per cent of the respondents were not aware of the renewable energies. Among the 60 respondents 64 percentage the respondents majorly knew about solar energy. They lack awareness about wind, thermal, nuclear energies. The study found higher levels of awareness on solar energy.
- Majority 82 per cent of the respondents revealed that they were not using Bio-gas. Rest 18 per cent of them were using bio-gas. They were not interested to adopt it because of its smell.
- 81 percent of the respondents were uses waste wood for various purpose such as boiling bath water and others. Whereas 19 % of respondents were having LPG connections in their house for kitchen activities.
- 78% respondents were opined that utilisation of solar grids in Malnad Region is beneficial, while 10% of respondents expressed that it is not fully feasible because Shimoga has enough sun for only 9 months and the remaining part of the year it is not very effective because of monsoon inadequate sunlight to generate energy.

#### Attitude towards adopting new technologies

All respondents are aware about renewable energy, and 46% of respondents have installed solar grids in their homes. They feel happy and satisfied using this renewable energy. Other forms of non-renewable energy are also practiced by a small section. Biogas is used by 10% of the respondents.

Lack of support from the government is reported as one major

reason for not many people to adopt the alternative energy sources. None of the respondents reported to have received any subsidy or benefit from the government to install Biogas or solar grids

Odour of bio gas plants is reported as a constraint and bottleneck in its wider acceptance. "Smell" of biogas plants was responsible for 82 % of the respondents to reject Bio-gas energy.

Alternative technologies also have non-technical aspects like social acceptance and perceptions about the technology. Many respondents reported that adoption of alternative energy sources is considered based on its initial cost, maintenance costs, cleanliness, and social acceptance. Though bio gas plants require no special skills of experts and are manageable by local people, it is not very popular because of the odour.

Attitudes and acceptance of the alternative technologies changes slowly, and techno-economic features alone are not enough in gaining acceptance. Great potential of adopting alternative energy sources

But people are not in the position to embrace new technology. Since the inception of renewable energy, new and stable jobs have been added to world economy. Experts project that with the ongoing rigorous campaigns to embrace renewable energy, thousands of stable jobs will be created through it.

#### **Social work intervention**

- At every Grama Panchayat level the government should establish solar grids to generate power to cater the demands of electricity pertaining to the village. Towards that end social work primary method should be followed to motivate the people at micro level.
- The government should initiate awareness drive focused on renewable sources with the collaboration of local NGOs.
- At mezzo level policies should be enacted to provide subsidies to attract the entrepreneurs to adopt new technologies which are eco-friendly. Such as installing solar grids at community level, establishing Bio-gas plant etc., By providing policy makers with a better understanding of the proper purpose, character and techniques of public and stakeholder participation' in renewable energy developments.
- Community organisation method should be adopted to conduct participatory rural appraisal to understand the community responsibility among the people and local government.
- Gap has been identified as lack of social work research; therefore educational institutions should focus on Research and Development activities in developing new technological alternative renewable energies.
- Educational Institutions syllabus should include the practical experiments involving students, parents and community people to use renewable energy and to promote eco-concern attitude among the students.
- Deliberate public awareness should constantly conduct to increase the awareness on renewable energy.

#### **Conclusion**

The aim of the researcher is to find out the awareness level of the people towards the renewable energy. The aim of the

researcher is to find out the awareness level of the people towards the renewable energy. Majority 64 per cent of the respondents were aware about renewable energies and rest 36 per cent of the respondents were not aware of the renewable energies. They lack awareness about wind, thermal, nuclear energies. The attitude of respondents towards adopting the renewable energy was not positive. Though the shimoga district is *half -malnadu* The study found higher levels of awareness on solar energy. Increased usage of alternative renewable technologies could be one way to sustainable development. Modern sources of energy can take place in many different ways. With help of social work intervention with collaboration with community people, government, NGOs, civil society awareness should be disseminated among the community people. It is concluded that appropriate knowledge and awareness about the environment issues will be the best guarantee to prevent environment degradation and utilise renewable energy, which is the only way to ensure sustainable development. Hence it is the honour of social worker to systematically develop and apply theoretical and practical responses to the contemporary environmental crisis.

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