ABSTRACT

The carbon trading mechanism is in the forefront of humanity as it integrates people from all streams to restore the health of biosphere, so as it can mitigate the climate change which has resulted in global warming causing irregular climatic conditions. The aim of the present research is to develop a suitable model for sustainable rural development by redefining the structure of existing rural development schemes to fit them in carbon trading by designing a sustainable rural development model under clean development mechanism.

It is observed from the research that, the present Rural Development schemes does not have a structured way of approach to satisfy the Clean Development Mechanism (CDM). The existing schemes in the area of Rural Development are just satisfying the basic requirement of rural population under the restrained budget, and executed in most traditional form. This is high time to think on changing the traditional way of formulating the rural development schemes so as it can capitalize the carbon trading mechanism, at national and international perspectives which is an appropriate way for Sustainable Development in rural biomes of India.

By doing this a scope for Foreign Direct Investment can be encouraged by solving the problem of budget shortage of Indian Economy. A development took place even under the traditional Rural Development approaches is neither supporting the basic requirements of rural people which is huge in size as it accounts for about 70% of Indian population also nor have environmental sustainable approach.

By developing an appropriate Clean Development Mechanism Model, specifically for rural development and make them to fit in the global context as the present first commitment period of the Kyoto protocol ends by end of the year 2012. It needs to be properly amended; the Model developed can play a crucial role for Sustainable Rural Development, also it is a primary requirement in the present scenario of Rural Development.

To develop an appropriate Clean Development Mechanism the actual rural life pattern and the way in which the rural development activities are happening and also how requirements of rural people are damaging the environment in Indian Context are
investigated in this research, by selecting Tumkur district in southern Karnataka in India. Present Rural Indian ways of living already have sustainable lifestyles and sustainable livelihoods. The same has been used as research parameters for developing the CDM model.

The name Ergo polis has been coined for the Clean Development Mechanism Model which is required to be developed. The main aim of “Ergo polis” is to establish a sound base to acknowledge that that Indian Villages are already sustainable under environmental perspectives. The only hurdle they are facing is the inappropriate valuation technique of villages under the CDM aspects. If we consider the carbon fixing management as envisaged by environmental groups and protocols, it is certainly valued them now at a very low profile. Till this time, there are no generally agreed-upon definitions to define Ergopolis. For this reason the Ergopolis is proposed to define as:

**Ergo:** Ergo may refer to: A Latin word means “therefore.” In logic, ergo means the conclusion of a preceding argument.

**Polis:** in ancient Greek polis ([AncientGreek: pólis]), plural poleis ([póleːs]), means a city-state or body of citizens. When used to describe Classical Athens and its contemporaries, polis is often translated as "city-state", a domain of a population of smaller size.

Hence the term “Polis” has been considered to represent a set of citizen body at lower hierarchy in human settlement size which means to consider a village in Indian human settlement system.

And the term **Ergo** means “**therefore**” stating the meaning reason or conclusion of a preceding argument. It has been utilized here to represent a reason or the cause that is the consideration of Clean Development Mechanism for rural development which is also a principal aim the research. So **a village habitat** which is considered to develop a Clean Development Mechanism Model is proposed to be called as “Ergo Polis”. The “Ergo Polis” sounds, in place of traditional term village, to represent the term village in the modern context of India.

Villages are Micro nations of India. Therefore the term Ergo polis is coined for the purpose of defining the entire rural biomes of India under Clean Development
Mechanism to develop a Clean Development Mechanism Model for sustainable Rural Development. In the research it is defended that Indian villages are of human scale settlements, and village communities are environmentally sustainable with the support of their lifestyles and livelihoods. Hence they can be considered as micro nations. Our constitution as per 73rd Amendment has to empower gram-panchayths to micro nationhood for achieving highest success rate in future by executing the concept like PURA and several other rural development schemes and programmes so as to result in reverse migration or mitigate migration.

The lifestyles and livelihoods in villages are eco-friendly, expect with a least damages to environment by using non-renewable energy at domestic level, also villagers work for 12-14 hours per day throughout the year and contributing about 42% to our national income. Ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a physical system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance. Ergonomics is employed to fulfill the two goals of health and productivity.

The data collection, analysis and drawing conclusion relating to the preceding discussion are the processes behind the principal objectives of the research and progressing further in the research a CDM model for the Sustainable Rural Development has been proposed by considering and restructuring the existing rural development schemes and programmes.

Also the research goal for this thesis has been to investigate whether the Clean Development Mechanism (CDM) under the Kyoto Protocol can play a significant role in sustainable development of rural communities, including uptake of small-scale renewable energy projects in developing countries and thus expand access to energy services through the use of local, renewable energy resources.

The research methodology was centered on assessing registered small-scale CDM projects under the Kyoto Protocol in terms of their potential impact on the envisaged sustainable development goals for rural communities and associated benefits such as accelerating the development of renewable and clean energy projects in the developing countries.
The research core of the thesis has been the analysis of registered small-scale CDM projects under UNFCCC for sustainable development benefits in terms of environmental, social, economic factors and technological developments. The research concludes that the CDM in the current state and design is facing several challenges which are hindering the mechanism to deliver and adhere to its dual objectives of emission reductions and sustainable development.

The research also concludes that small-scale, community based rural renewable energy CDM projects can offer good prospects for poverty and livelihood benefits. In addition such projects can assist in terms of developing and deploying Renewable Energy (RE) technologies in remote un-electrified regions promoting local entrepreneurship resulting in cost effective implementation of RE projects in these regions. Finally, the research has also made recommendations to address the above challenges.