RESEARCH PAPER:

Community perception, understanding and willingness towards global warming

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SUMMARY

Any attempt by industry or government to address greenhouse gas emissions and global warming will require public understanding or recognition of the problem. Concern about climate change, like ozone depletion and biodiversity loss, is a relatively new phenomenon on the public scene. Over the last century, human activity has led to a dramatic increase in the amount of greenhouse gases in the atmosphere. Most experts agree that build-up of greenhouse gases has contributed to an increase of 1.3^0 Fahrenheit in the Earth's average surface temperature over the past 100 years. Current rate of greenhouse gas build-up will cause further warming and induce additional changes in the climate system that would likely be larger than those observed during the 20^{th} century. This paper summarizes public perception, understanding and willingness towards global warming in Bangalore urban district. The survey found that, 24 per cent of the respondents declared, they were worried "a great deal" over the fluctuated climatic conditions in recent years and were familiar with the causes of global warming and are willing to reduce their greenhouse gases voluntarily. It is hoped that results of this survey will be helpful in designing the first signs of a social tipping point, leading to greater levels of community engagement in mitigation of climate change through campaigns, in a scientific manner to create awareness among the individuals.

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Over the last quarter century, most of researches on environmentalism has been conducted using quantitative analyses of survey data. This tradition is beginning to build cumulative knowledge regarding the demographic determinants of environmental concern (Van *et al.,* 1980, Jones *et al.,* 1992). The build-up of greenhouse gases in the atmosphere has been driven largely by growing consumption of fossil fuels in the industrialized world. But in looking to the future, the growth of greenhouse gas emissions will be determined by a number of factors, including the spread of technology, and patterns of economic growth and land use.

The overwhelming majority of this growth will occur in the developing world. As developing countries continue on a path of economic growth and industrialization, their contribution to global greenhouse gas emissions will increase. Awareness of the problem is a necessary, but insufficient condition to motivate an individual or collective response. Meanwhile, social science research has demonstrated that risk perceptions are critical components of public and social responses to hazards. In depth studies often assess public perceptions of the likelihood and severity of potential consequences. Unfortunately, no in depth study on regional risk perceptions of global warming has yet been conducted, so we still know very little about how the global or diverse national publics perceive this issue. There are, however, limited data on the perceived seriousness of global warming.

Public opinion is critical because it is a key component of the socio-political context within which policy makers operate. Public opinion can fundamentally compel or constrain political, economic and social action to address particular risks. Public support or opposition to climate policies will be greatly influenced by public perceptions of the risks and dangers of global warming. Further, successfully mitigating

or adapting to global warming will require changes in the behaviour of billions of human beings, who each day make individual choices that collectively have enormous impacts on the earth's climate.

Need for global warming information:

Several studies have found that the American public lacks a basic understanding of global warming, its causes, and the actions that can be undertaken to slow the rate of climate change. Individuals tend to confuse the problems of global warming and ozone depletion and view weather and climate as the same (Rachael *et al.,* 2008). Consistent with these misunderstandings (Bostrom *et al.,* 1994) found that their study participants focused on ineffective actions to stop climate change, such as not using spray cans, and under emphasized the importance of energy conservation

A study with a representative sample of the U.S. population (Dunlap, 1998) also found low levels of global warming knowledge. In this study, only 11 per cent of the Americans sampled said they understood global warming "very well." Furthermore, when asked to state the main causes of global warming, 12 per cent mentioned fossil fuel use (the same was also found in a study by Brechin, 2003); respondents mentioned ozone and CFCs much more frequently as causes.

A representative sample of over 1,000 Floridians was surveyed in May 2008. A large majority of the respondents was convinced that global warming is happening (71%). Of those, 50 per cent believed that global warming is caused mainly by human activities, while 32 per cent believed it is caused mostly by natural changes in the environment, and 13 per cent believed it is caused equally by humans and natural changes (Anthony and Kenneth, 2007).

Bangalore is one of the fastest growing cities and is branded as 'Silicon valley of India' for heralding and spearheading the growth of Information Technology (IT) based industries in the country. With the advent and growth of IT industry, as well as numerous industries in other sectors and the onset of economic liberalization since the early 1990's, Bangalore has taken lead in service-based industries fuelling substantial growth of the city both economically and spatially. Bangalore has become a cosmopolitan city attracting people and business alike, within and across nations (Sudhira *et al.,* 2007). With this background, the paper reports the results of a study designed to estimate the public perception, understanding and willingness towards global warming in Bangalore population to avert severe climate change.

EXPERIMENTAL METHODOLOGY

The study was carried and the data were collected from different zones of Bangalore urban district. A questionnaire survey was conducted amongst the community to collect the data about the perception, understanding and willingness towards global warming. To recognize the perception, understanding and willingness towards global warming among the population various techniques like group discussion, observation, questions on work-leisure choices, community involvement and type of activities were adopted. The sample survey size among the community was 1 per cent. statistical results were weighted to correct known demographic discrepancies. The questionnaire was framed in such a way that the respondent should answer without leaving any question.

EXPERIMENTAL FINDINGS AND DISCUSSION

The results of the present study as well as relevant discussions have been presented under following sub heads:

Community awareness and general concern for global warming:

Community awareness:

From the study in urban Bangalore on the public perception, understanding and willingness to mitigate global warming included various aspects like community awareness and general concern for global warming, seriousness of global warming and threats and worries in the future. Majority of the local people (72 %) were responded that they had heard about the global warming, and 19 per cent of respondents had never heard of the global warming and only 9 per cent of respondents were unaware about changing climate (Fig. 1).

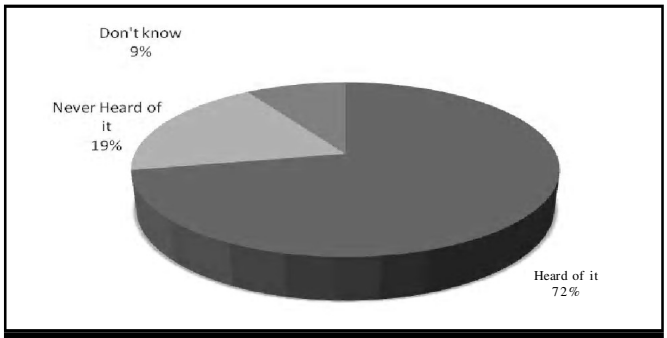

Fig. 1: Community awareness

Threats:

Only 27 per cent of the respondents considered that

the global warming is dangerous and has direct threat to them and their families than do individuals, while 38 per cent of respondents considered global warming is important but not dangerous to them (Fig. 2). However, 16 per cent and 19 per cent of respondents considered global warming is not important and are not sure about the threats that are caused by global warming, respectively.

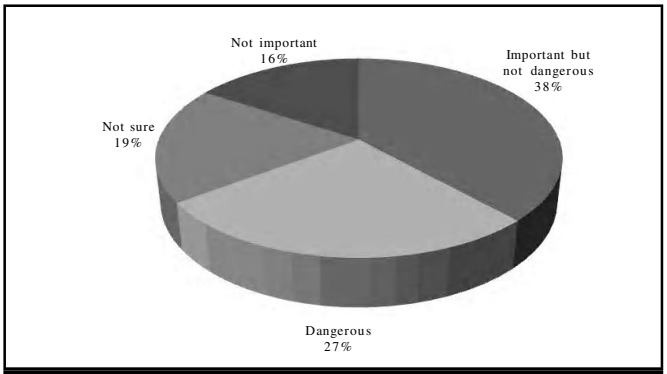

Fig. 2: Can global warming cause threat in future!

Worry:

Climate change has both positive and negative impact on urban environment and human beings was the response of the people based on their past experience of those warming days, erratic rainfall patterns, ecological variability and biological change. Majority of the respondents (31%) were not worried about global warming while 28 per cent and 24 per cent of the respondents had a fair knowledge and a great deal about the global warming (Fig. 3). Moreover, Only 10 per cent respondents who said they don't worry about global warming and 7 per cent respondents were unaware about changing climate and its impacts.

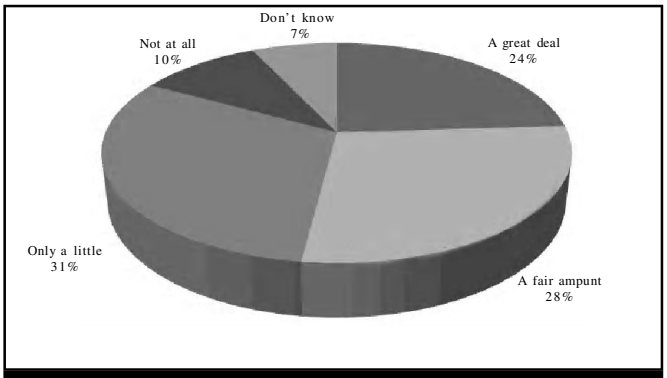

Fig. 3 : Worry about global warming

Seriousness:

Awareness of the problem and insufficient condition to motivate an individual or collective response is necessary**.** In the study, 35 per cent of the respondents were greatly worried and 28 per cent were just worried about the impacts caused by the changing climate (Fig. 4). Moreover, 37 per cent of the respondents were not worried about the impacts that are caused by and that global warming will cause, which may be for a variety of reasons, ranging from decreased scientific certainty, lack of information, data, facts and figures and policymaker attention, observed impacts around the world, or the diffusion of basic awareness of the local or regional problems.

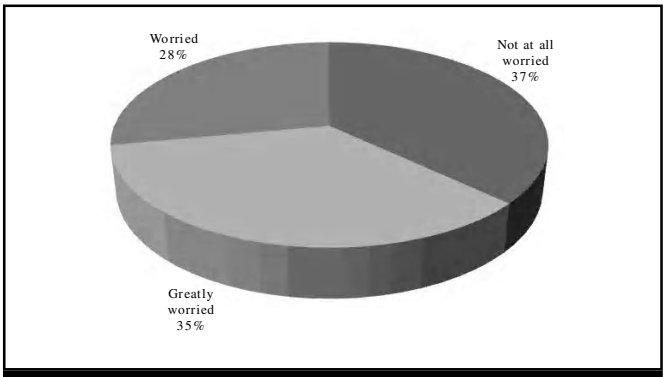

Fig. 4 : Seriousness of global warming

Community understanding of global warming:

Primary cause for global warming:

To probe community understanding about the primary cause of global warming, a survey was conducted in urban Bangalore and the results were as follows: 55 per cent of the people's responded that global warming was due to over population, 68 per cent responded that it was from pollution, emissions from business and industry, 22 per cent response's was towards to destruction of urban forest, 39 per cent was from urbanization, 15 per cent people response was from heat islands, 18 per cent was from use of chemicals to destroy insect pests and 9 per cent use of aerosol spray cans (Fig. 5). Thus. accurate understanding of the causes of global warming remain quite limited in the urban Bangalore.

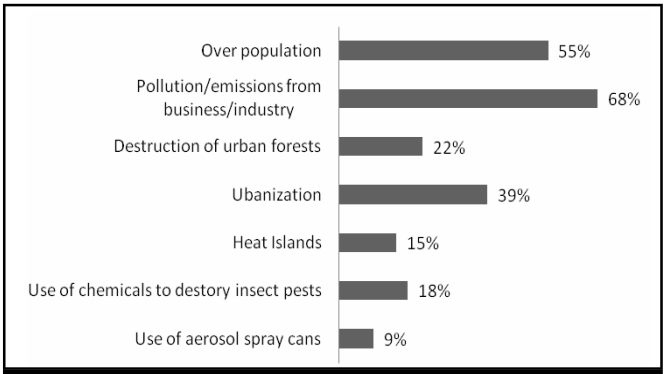

Fig. 5 : Primary couse for global warming

Most effective solution to subside global warming:

The study was also extended to know the most effective solution to mitigate global warming in Bangalore urban city. Renewable energy and limiting population growth were the most identified solutions (63% and 46%, respectively), using more efficient appliances (29%), reduction of waste (21%), Afforestation (19%), recycling (17%) and banning aerosol spray cans (9%) were the other important solutions (Fig. 6).

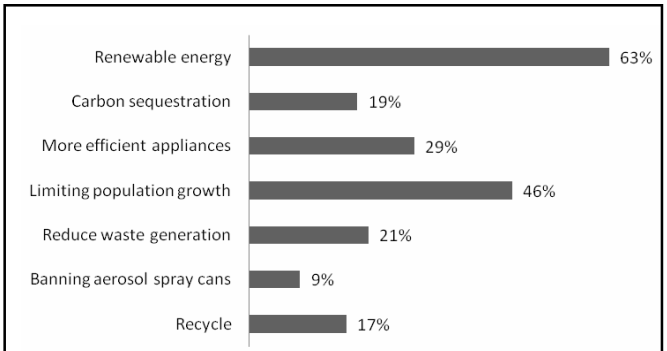

Fig. 6 : Most effective solution to global warming

Willingness to reduce GHG emissions voluntarily:

Successful mitigation of global warming will require willingness and changes in the behaviour of billions of human beings, who each day make individual choices that collectively have enormous impacts on the earth's climate. As a result, survey was carried out to know the people's willingness and contribution to mitigation of global warming in Bangalore city (Fig.7). 36 per cent of the respondents agreed and 24 per cent of the respondents were not willing to adapt to the changes. Majority of the respondents (40%), were uncertain to reduce GHG's voluntarily or with the help of the government incentives.

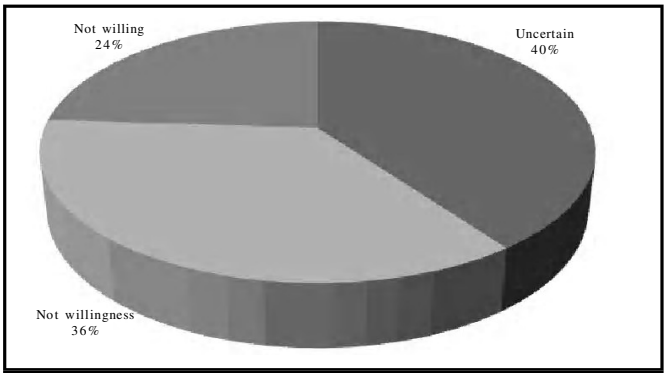

Fig. 7 : Willingness to reduce GHG emissions volutarilly

Conclusion:

Based on the limited data available, it appears that although large majorities of the urban community are aware of global warming and large majorities believe that climate change is a very serious problem and is growing more concerned. In general, there appears to be significantly greater concern about climate change in the metropolitan city. Despite the critical need for widespread changes in climate change-related consumer and political behaviour around Bangalore, we still know very little about what individuals are willing or able to do, what barriers to action they confront, or what factors motivate these behavioral changes. The very limited data we do have at least suggest to willingness by paying higher prices for fuel if the money raised was devoted to reducing air pollution and higher prices for electricity produced by renewable energy sources. Thus, a market for green energy and products is an immediate demand for less carbon-intensive goods and services.

Thus, overall, awareness, concern, and support for significant action to deal with global warming appears to be gaining momentum among the public, although there are many obstacles remaining, including our limited understanding of the current status of global community opinion and the unknown potential for rapid social change to dramatically reduce global greenhouse gas emissions at a rate fast enough to forestall large-scale climate disruptions. It is hoped that results of this survey will be helpful in designing the first signs of a social tipping point, leading to greater levels of community engagement in mitigation of climate change through campaigns, in a scientific manner to create awareness among the individuals.

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