Climate Change: Awareness, Attitudes and Actions : A Sri Lankan Perspective

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Introduction

Climate change[3] is happening and is felt deeply globally. Sri Lanka is already facing the adverse impacts of climate change in the form of droughts, unprecedented and rising temperature, floods, unseasonal rain, and coastal erosion. As a small island nation, Sri Lanka falls into the UNFCCC and IPCC's category of 'vulnerable' Small Island nations which are under serious threat from various climate change impacts, such as sea level rise and severe floods and droughts (Climate Change Secretariat, 2014). These threats are considered to have significant negative consequences on various sectors within Sri Lanka (Athukorala, 2015).

Sri Lanka is a negligible contributor to global warming. However, as a nation, we are highly vulnerable to the impacts of climate change. Sri Lanka has ratified the United Nations Framework Convention on Climate Change (UNFCC) in November 1993 and became a party to the Kyoto Protocol in 2002. The national Climate Change Policy of Sri Lanka aims to sensitize and make aware the communities periodically

[3] "Climate change" means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. (United Nations Framework Convention for Climate Change 1992)

on the country's vulnerability to climate change and to enhance knowledge on the multifaceted issues related to climate change in the society and build their capacity to make prudent choices in decision-making.

A number of research were done in Sri Lanka on the different causes of climate change. However, there is little literature to understand Sri Lankans' awareness about climate change to determine if they act as responsive citizens to their share of emissions. According to Margaret Gardner, "in the next 55 years the greatest threat to Sri Lanka will be from climate change. Sri Lanka is particularly vulnerable to rising sea levels and weather-related disasters have the potential to set back any gains made in agriculture, fisheries and even services such as tourism" (Fernando, 2017). This paper helps to determine the success of using the environment valuation methods as a pragmatic approach to monitor the 'nationally determined contributions'.

Objective

The objective of this paper is to understand people's awareness on climate change and its impact, to investigate the relationship between household income and the level of awareness on climate change and to investigate the demand for climate change mitigation action by their willingness to pay to compensate their emissions and damages to the environment.

Methodology

The survey was done from May to June 2017 by gathering primary data using a semi-structured questionnaire in both local languages as well as an online survey. The respondents represented different age groups, gender, education status and income levels. 120 respondents from 15 districts consisted of farmers, government and non-government employees, school children, self-employed and unemployed. They are between the ages of 15 to 67. 87 % represent rural sector and 13 %

represent urban sector. Also 55 % of the respondents are females. The secondary data on climate change was gathered from on-line sources.

Average imputation and common-point imputation are being used to fill the missing vital data. These methodologies analyses the association between categorical variables. Microsoft Excel and Minitab were used to obtain an accurate assessment of relationships, and possible contradictions found in the data by generating graphs, charts, cross tabulation and descriptive statistics. The contingent valuation method was applied in this study by asking the respondents for their Willingness to Pay (WTP) to offset their contribution to climate change and damages to the environment.

Results and Discussion

People's awareness on climate change and its impact

In our sample 99 % of the respondents have stated that they are aware of the concept of climate change irrespective of gender, age, educational background, income level or their locality. Among those who are aware of climate change 41 % had come to know through media, 35 % have felt it and 14 % have heard it from other people. The survey indicate that 14.5 % respondents thought climate change was caused only by humans, while 9.6 % thought it happens naturally. 75 % of the respondents indicated that the cause for climate change is both by human and natural reasons.

When the respondents were asked to rate top three environmental issues; first rated issue was deforestation with 93 %, second highest was extreme weather conditions i.e. rains and droughts (82.5 %). Third rated with 75 % was water pollution. Findings also reveal how respondents conceptualize climate change; while majority of them interpret it as the rise in temperature and global warming, droughts, heavy rains, irregular rain patterns and floods, others interpret it as storms and strong winds, strange weather patterns, irregular climate, rise in sea water level, spread of diseases, Tsunami, disturbance to

natural cycle, presence of Elnino and Lanino, failed agriculture and change in harvest patterns. While few relate it with melting of glaciers, depletion of Ozone layer and GHG emissions. Likewise, people's beliefs about air pollution, factory / vehicle emissions, deforestation, and unplanned development are also again a way of anchoring climate change. The survey finding also indicated that the respondents are aware that the prevailing climatic conditions are impacts of climate change. Majority of the respondents felt that drought, floods and global warming are impacts of climate change; 36 %, 26 % and 25 % respectively.

The relationship between household income and the level of awareness on climate change

Results indicate there is no relationship between household income and the level of awareness on climate change (figure 1). Of those who are aware of climate change 28.3 % are very low, 28.3 % are middle, 24 % are average and 7.5 % are upper class income earners. 93 % of people agree that climate change is a common problem for everyone. Again, their income level and answers do not show any relationship. However, 39 % involved in farming strongly agree that climate change to be a common issue.

When judgments of other issues are solicited, climate change is invariably not the highest or most important priority for many people. Only 17 % of the respondents believed that environment was a pressing issue in Sri Lanka. Environmental problems were rated seventh place of ten other current problems given. Understanding people's perceptions as contributors for the climate change is an important indicator of awareness. It is evidence that 90 % of people believe they contribute to climate change in some way. Of the respondents, 48 % are females and 48 % are involved in farming. Comparing it with the level of income, 28 % of very low-income holders, 20.8 % of average and 23 % of middle income earners believed that they are contributing to the climate change (figure 2). Neither gender, age, education nor income level or if farmer or not suggest a correlation.

The demand for climate change mitigation action by their willingness to pay to compensate the damage caused by them to the environment.

The respondents were introduced to a hypothetical fund called 'Green Future' which will be exclusively used for tree planting to compensate for the anthropogenic effects. The respondents were asked for their WTP for the fund and if they were willing, the maximum amount they can contribute annually. Further, 78 % of the respondents were willing to pay for the green future fund and out of them 42.5 % were females and 40.8 % were advanced level students and 15 % of them were graduates. The youth are sensitive to the climate change and proactive to make an action. A correlation cannot be observed between income level and peoples' WTP. Approximately 22 % of those who were not willing to pay, stated their reason as their income being low or them willing to spend the money on other things. Further, 83 respondents stated a maximum amount they are willing to contribute annually to offset their emissions and harm to the environment. The amount ranged between Rs. 50 to Rs. 12,000. Out of those who are willing to pay and who earn more than Rs. 1,000.00 monthly income; people are willing to contribute 0.69 % (on an average) of their monthly income for the 'Green Future' program. Their average annual contribution in rupees amounts to Rs. 2,154.

Conclusion and Policy Implications

Sri Lankan's awareness on climate change is in satisfactorily high level. Media is the main source people had come to know about climate change. The way people have described climate change varied from bringing out real-time examples, to attempts for text-book definitions. Placed among other problems country currently faces, their ranking for the environment as a topic was towards the lower side.

There is no relationship between Sri Lankan's awareness level on climate change and their income. The conclusion holds still with the farmers and non-farmers responses. 78 % of the respondents were willing to pay for a hypothetical fund that will be used for replanting

trees. Of the people who are able to pay, and have suggested an amount, it is about 0.69 % of their monthly income and annually it will amount to Rs. 2,154.41. Despite high awareness level, when it comes to action, the youth are keen to express climate change and even ready to take action. As a recommendation, the respondents suggest that Sri Lankans have to change the lifestyles to reduce energy consumption in order to address climate change.

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Table 1: WTP among different income groups

Income Level	Average Amount of WTP (Rs.)	Average of Amount as a Percent of Monthly Income
Average	1061.1	0.4456
Low	1108.3	1.3079
Middle	1460.9	0.3199
Upper Class	6581.3	0.5931
Upper Middle	4866.7	0.6348
Very Low	757.1	2.1944
Grand Total	2154.4	0.6932

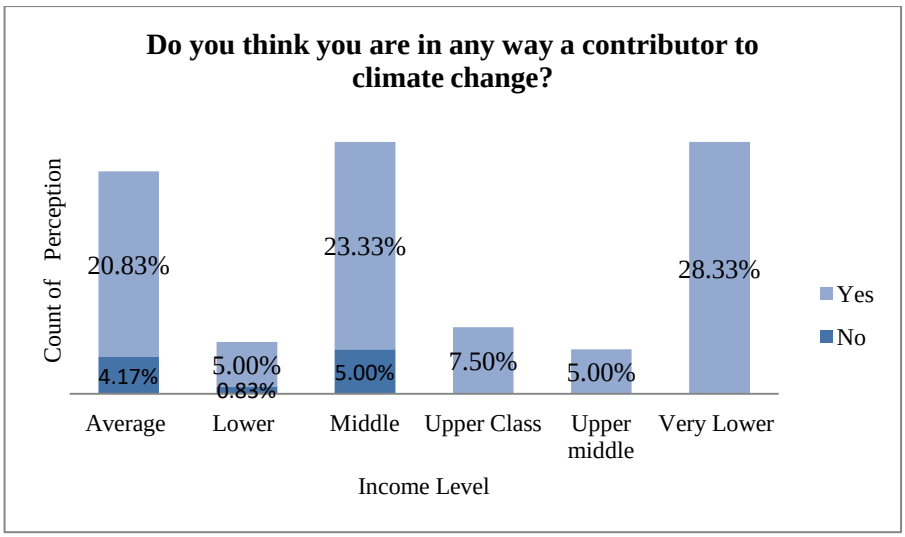

Figure 1: Perceptions towards the contribution to climate change