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Case Study

Study on Impact of Climate Change and Its Effect on the Situation of Women: A Case Study of Lele Village Development Committee (VDC), Lalitpur, Nepal

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Abstract

Climate change is believed to impact people unequally. It is said that the poor, women and vulnerable groups who are dependent on climate sensitive livelihood will be affected the most. In Nepal, women comprise of majority of poor who have extended involvement in agricultural activities due to mass out migration of men. The objective of the study is to study the impact of climate change on the situation of women, and to assess the impact of climate change on the condition and position of women. The study area was Lele, Lalitpur where sample size of the study was fifty women who were dependent on agriculture. Primary data was collected by focus group discussion, questionnaire survey and key informant interview. Study showed that climatic variability has impacted agriculture in terms of soil compaction and increase in pest, which has increased in workload of women and time availability as well. Climate Change has impacted in the situation of women in the study area by increasing their burden of work, increasing their exposure to pesticides, increasing their dependency on market food due to decline in production affecting their nutrition and also increasing the cost of production.

Keywords: Climate change; gender; agriculture; Nepal

Introduction

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 (UNFCCC, 1992). It has been widely recognized that climate change affect people unequally; and impact often exacerbate the existing inequalities, vulnerabilities and economic poverty (Brody *et al*., 2008). Differently positioned men and women have differences in the experience of impact of climate change which is due to their distinct socially constructed gender roles, responsibility, status and identity (FAO, 2010). Poverty and climate change are closely related. The poorest and most disadvantaged groups tend to depend on climate-sensitive livelihoods like agriculture, which makes them disproportionately vulnerable to climate change (FAO, 2011; Women watch, 2009).

Climate change has been predicted to have adverse impacts on agriculture with developing countries bearing the majority of the brunt despite their limited capacities to mitigate and adapt (IPCC, 2007). In context of Nepal, due decline in agricultural productivity, increase in food insecurity and decline in economic activities like income generation and production along with poor governance, inadequate infrastructure and sparse service network is and will trap the poor in a vicious cycle of poverty (Dell *et al*., 2013). In Nepal, women constitute the majority of poor and are the most vulnerable group. Women in Nepal have extended their involvement in agricultural work due to massive out migration of male to foreign for employment (Gartaula *et al*., 2010). Women are bound to spend more time on farm and they also have the responsibility to execute household and off farm work (Cornhiel, 2006). In addition to it; climate change has affected women's life. According to Women Organizing Change in Agriculture and Natural Resources Management (Gurung and Bisht, 2014) climate

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change in Nepal has impacted women by increasing women's workload and drudgery, loss in income due to loss in agricultural production, reinforcement of women's exclusion, backsliding of rural women's achievement and roles, declining women's leadership, mismatch between demand and supply, increase in health issues and lack of financial resources. Thereof, climate change is imposing threat to material and condition of women; which makes them more vulnerable to cope and adapt with climate change. The objective of the study is to assess the impact of climate change on agriculture and the position and conditions of women.

Materials and Methods

Study Area

Based on purposive sampling method, the study area was Lele VDC of Lalitpur district of Nepal. This study site was selected because the main occupation of people of the site is agriculture and during the literature review there were not much study in Lele VDC in regard of climate change. Also, due to accessibility, it has been chosen for the study.

Sample Size

Systematic random sampling was used for the study. Sample size for the study was fifty households of the VDC to represent the population of the study area. Sampling will be conducted in distributive manner.

Sampling Unit

Sampling units were the households of the VDC, agricultural farmers group, VDC and agricultural extension service officers.

Respondents

Respondent at household level was women with spouses who were involved in agriculture. Women of registered farmers group were the respondents for group discussion.

Data Collection

Secondary Data Collection:

Secondary data related to climate change and gender was collected from different sources like books, journals, articles, reports, websites and newspapers.

Primary Data Collection:

For the primary data collection following tools were used in the study area;

Questionnaire survey: Semi structured questions was used to conduct the questionnaire survey. Sample size for the questionnaire survey was fifty households. Respondents were selected on the basis of poverty and occupation. The target households were those who were dependent on agriculture for their livelihood. Women of the household were questioned for the survey.

Focus group discussion: Focus group discussion is an organized discussion on specific issues or questions. It was carried out in two groups of females separately, where 6-7 members of community was selected to discuss about their access to governmental agricultural services. Checklist was prepared to conduct the discussion to explore the gap of implementation of policy stated provisions.

Key Informant Interview: Key informant interview was conducted using checklists. It was conducted with key informant like community leaders, Agricultural extension service officer, women group leader, and VDC officer to explore their activities and services executed in agricultural extension and climate change.

Results and Discussions

Profile of Respondents

Table 1 to 3 show the profile (Ethnicity, Age and Education level) of respondents.

Table 1: Ethnicity of respondents

Caste	**Number**
Janajati	9
Newar	18
Dalit	11
Brahmin Chhetri	12

Table 2: Age of respondents

Age range	Percentage
20 to 30	24.00%
31 to 40	36.00%
41 to 50	26.00%
Above 50	14.00%

Table 3: Education level of respondents

Education Level	Number
Illiterate	14
Literate	21
Primary Level	9
Lower secondary	4
Secondary	2

Perception On Change in Climatic Parameter

Majority of the respondents i.e. 64% of them have perceived that there has been an increase in temperature over the years in the study area. And, 22% of them have perceived that the area is undergoing prolonged dry periods as compared to the past (Fig. 1). In regards of rainfall pattern, majority of the respondents have stated that they have perceived there is less rainfall now as compared to the past. And, 22% of them state another significant change in rainfall pattern is that it does not occur on time as before which suggest shift in the rainfall pattern (Fig. 2). Perception of women in change in water sources is shown in Fig. 3.

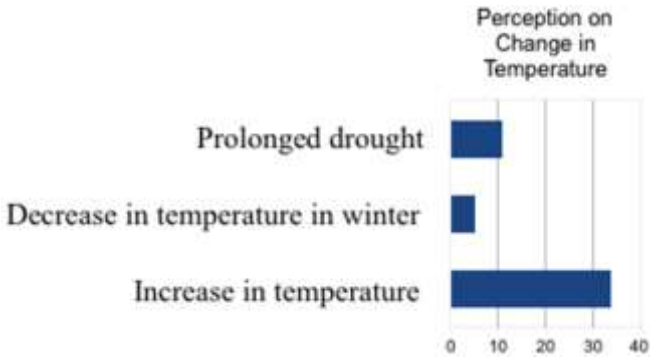

Fig. 1: Perception of women on change in temperature where majority of community has expresses rise in temperature over the time.

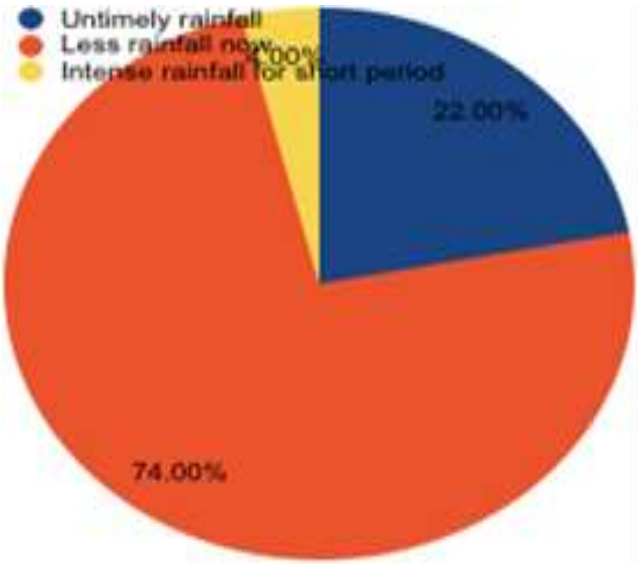

Fig. 2: Perception of women on change in rainfall pattern.

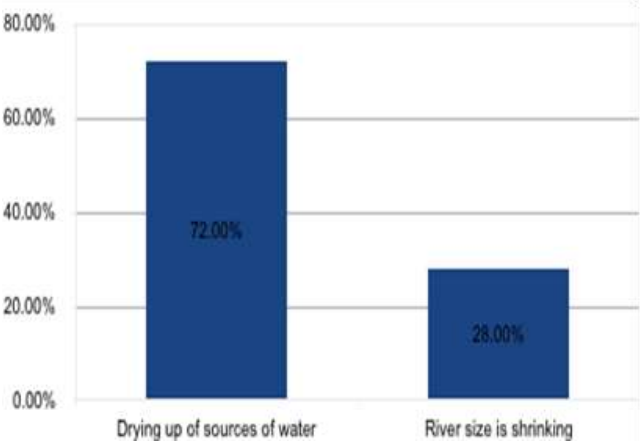

Fig. 3: Perception of women in change in water sources.

Impact of climate change on resources for livelihood, and agriculture

About 74% of the respondents have observed that water resources are drying up and it is impacting their workload. Their concern is for the future if water availability will eventually lower due to the present climatic changes. Respondents have stated that the major impact of climatic changes in agriculture has been compaction of soil which has resulted in increased number of days in ploughing (Fig. 4). Impact of climate change on the workload of women is shown in Fig. 5. Another significant impact is increase in different type of pests in vegetation which also has imposed the increase of exposure of women to pesticides. They state that the number of time they use the pesticide has increased before they use to spray it every fortnight but now they are bound to use it twice a week. Another notable thing is that most of the women are unaware of the kind of pesticide they are using. They cannot even purchase it by their name rather they would use the old bottle to purchase it and apply it as per the direction of the vendor. Women have also complained of dizziness and nausea immediately after the use of pesticides and nor they have access to safety measures in applying them the field. Third impact as perceived by 22% of the women is that there is occurrence of more weeds now and have observed new weeds and they are bound to spend most time to remove such weeds.

Implication of climate change on position and conditions of women

In terms of workload, women of the study area state that it has increased in terms of agricultural work that they have to do. 58% of the respondents say that due to increase in pest they have to apply pesticide more often now. Before, they used to apply every two weeks but now they have to apply twice in a week. It not only has increased their workload but also exposed them to hazards of pesticide. Due to increase in the weeds, 22% of the respondent state that their workload has increased in removing the weeds more often. And they are forced to spend more hours in farm under the sun which causes headaches in them. Another significant problem was soil compaction recently which could be because of excessive use of pesticides or due to less rainfall and increase in temperature. 16% of the farmers have stated that the number of days in ploughing has increased implying increase in the cost as well. Also, the number of labour have increased. About 4% of the respondents state that their workload has increased in removing pests from stored produce

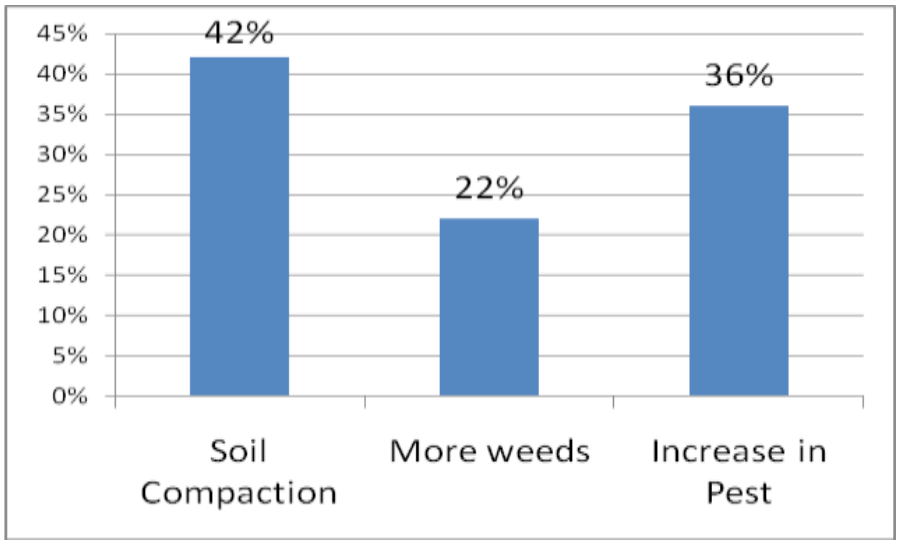

Fig. 4: Impact of climate change in agriculture

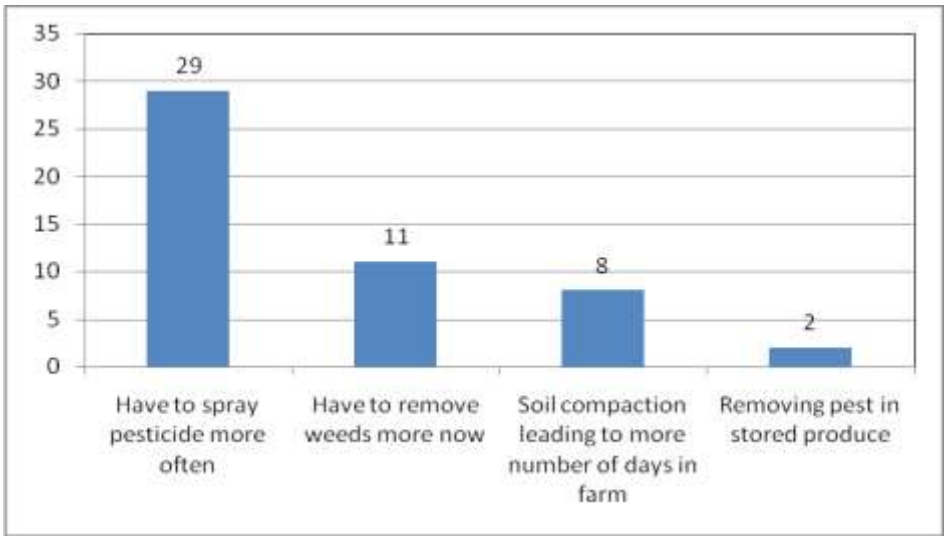

Fig. 5: Impact of climate change on the workload of women.

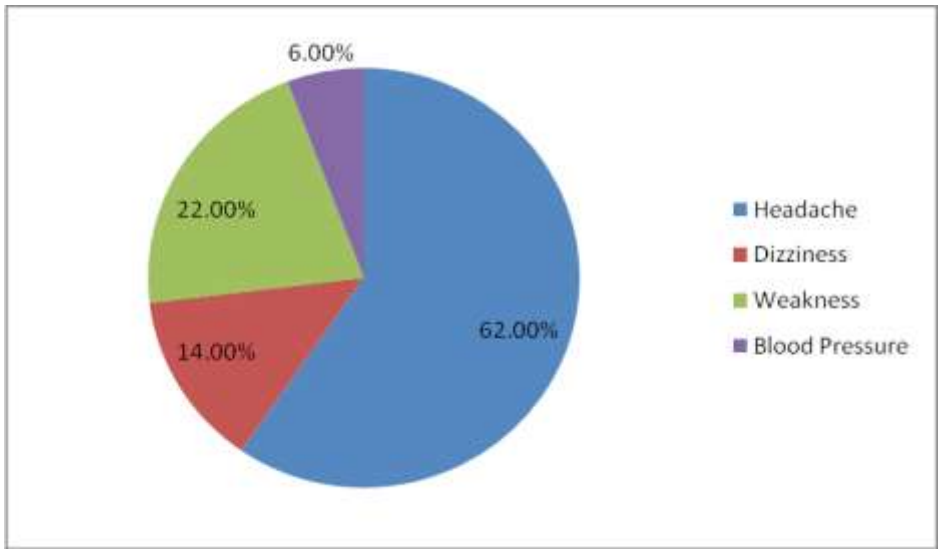

Fig. 6: Implication of change in climatic parameter on health condition of women.

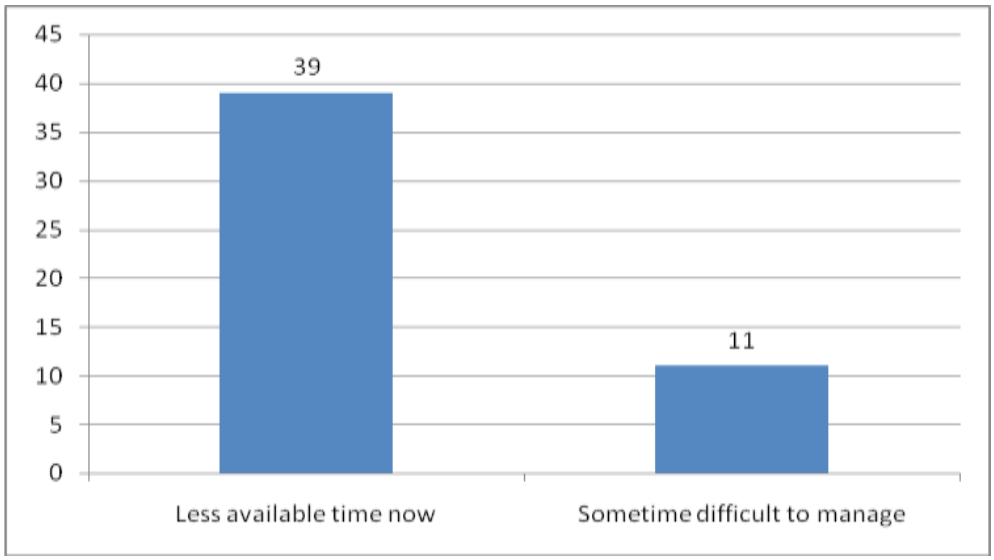

Fig. 7: Implication on women's time availability.

Women have experienced that their workload has increased due to the implications of climate change in their livelihood. 72% of the women state that they have less time available for other activities excluding their household work where as 11% of them state that sometimes it is very difficult to manage that they are not able to go on social programs and meetings.

Women have stated that due to increase in pest and use of pesticides, have to consume more of pesticide used produce. They have experienced that due to the use of pesticides the food doesn't taste as before and is not that nutritious. And the rest 34% of the women state that the climatic variability has affected their crop production and now they have to depend on market product which is not as nutritious as self produced.

Due to the changes in climatic parameters 62% of the women have stated that they have headaches more often now as they have to spend more time on farm then before and 22% of the women have stated that they feel weakness due to rise in temperature. And, 14% of the women have stated that they feel dizzy more often now and 6% of them have experienced problem of blood pressure during summer.

Most of the women about 72% of them were involved in various organizations like women group, farmers group and forest user group. Whereas 12% stated that they are not involved in any group and the major reasons were lack of time, not enough funds to participate and no information. Among the 12% of the women who were not involved in any organizations were mostly poor and socially excluded group. Regarding the services provided by the Agriculture Extension Service about 72% of the women were aware of it but only 40% of them had accessed the service of receiving seeds. And among them the women who were leaders of women group and forest user groups had accessed the trainings given by the center. Only, 62% of the women were involved in the farmers group rest say that they have less information and fund to be part of it and are not much aware of the services provided by it. Regarding the time constraint about 82% of the women say that sometimes they have difficulty to manage time to attend community meetings whereas 18% of them say that mostly they have the time constraint due to workload.

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