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A Gendered Approach to Awareness of Climate-resilient Agricultural Practices

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Over the years climate change has become a global issue and its impact on agriculture has a distressful effect on the production of food grains and the lives of the growers. Therefore, in this fast-evolving world being aware of the rapid changes has become the necessity of the hour. And keeping in view the present condition this study had been conducted in the Ganjam District of Odisha to understand the extent of awareness of Climate Resilient Agricultural Practices. A total of 200 male and female respondents, 100 each respectively were selected for the study. The findings revealed that most of the respondents i.e. 68.00 per cent male and 64.00 per cent female were partially aware, though it is also seen that (20.00%) female and (13.00%) male was unaware of climate-resilient agricultural practices which is evident that more females are unaware regarding the issues. Further, it was observed that Education, Information Source Utilization, Land Holding, and Type of family have a significant and positive relationship with the awareness of female respondents. The findings of this research would focus on creating more awareness among the people regarding the impacts of climate change and the benefits of adopting climate-resilient agricultural practices.

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1. INTRODUCTION

Climate change has brought about an alarming shift to our planet's geological, biological and ecological systems, which has exposed a major part of the earth's surface to climatic threats due to the sudden increase in climatic variability. These changing times have also shown their effect on the livelihood directly or indirectly, thus leading to concerns among mankind. This fact is supported by Olayinka et al. [1] who found that awareness of the various causes of climate change is generally below average and less than 50%, they, however, see it in terms of reduced agricultural productivity or ozone layer depletion. The agricultural sector has experienced a sharp decline in its production of food grains and cereals resulting in lifestyle deterioration in the farming community and a shortage of food. As indicated by certain studies [2,3,4], climate change would even disrupt individuals' daily activities, alter growing seasons, cause a decrease in crop yield and biomass production and increase the risk of food insecurity. Rural farmers in low-income countries feel the adverse effects of climate change more severely. Raghuvanshi and Ansari [5] also mentioned that climate change directly influences agriculture production. This sector is inherently sensitive to climatic conditions and is amongst the most vulnerable sectors at the risk and impact of global climate change. These adverse effects can be controlled to a great extent by making people more aware of the changes taking place and the mechanism to cope with those situations. It is essential to expose the farmers to different sources of media, ICT tools, access to training and workshops, participation in awareness programs, and increasing contact with the extension agents as these mediums would help them to be aware of climate changes and the resilient practices. Farmers cannot act to mitigate environmental issues if they are not aware of their existence [6]. And when farmers become aware of climate change, then only they will adopt the different adaptation practices to cope with the adverse impact of climate change on their farming system. However, the adaptive and awareness capacity is influenced by factors such as knowledge, culture, gender, resource accessibility, perceptions, policies, and institutions. As stated by Huyer and Partey [7] Men and Women are exposed to different climate shocks, they experience different impacts, and they have differential abilities and capacities to

respond, adapt to, and recover from climate change impacts. Mc Gregor [8] Climate change is a global phenomenon while adaptation is largely site-specific. A common disadvantage for local coping strategies is that they are often not shared widely, but rather handed down through oral history and local expertise. Anseera and Alex [9] A resilient system of agriculture is one that meets both food and development needs over both short and long terms, from local to global scales, without destabilizing the ecosystem. And this is possible when they are able to up-to-date themselves through exposure to training on climate change and adaptive practices, mass media, contact with resourceful agents, and most importantly proper access to education. At the same time, it is also important that they should not only be aware but also starts adapting the advanced and modified resilient agricultural practices designed to fit this changing climatic condition. Esham and Garforth [10] reported that the vulnerability of farmers to climate change and variability has been increasing in poor and least developing countries. This implies that adaptation measures are paramount for farmers' well-being as agriculture is their main source of income. Keeping in mind the changing scenario, this study mainly focuses on understanding the response of Men and Women Farmers on awareness of climate-resilient agricultural practices.

2. MATERIALS AND METHODS

The study was conducted using an Ex-post facto design to analyze the extent of awareness of climate change and climate-resilient agricultural practices. The research was conducted purposively in two villages *i.e* Chikarada and Sasanpadar from Brahmapur Subdivision of Ganjam District as those villages were exposed to some climate-resilient agricultural practices. A sample of 200 respondents (100 males and 100 females) respectively was selected for the study. A structured schedule had been constructed to collect the information on awareness of climate change and CRA practices. The extent of awareness was categorized using Mean \pm S.D as Unaware, Partially Aware, and Completely Aware and measured using frequency and percentage. Further, Spearman's Correlation Coefficient had been used to show the relationship between the socio-economic profile and awareness of the respondents.

3. RESULT AND DISCUSSIONS

The findings from Table.1 reveal that 69.50 percent are partially aware overall, out of which (64.00%) and (68.00%) are female and male respectively. This is because though farmers have experienced a change in climatic conditions over the years but they could not relate it to climate change. According to Meena et al. [11] Perceptions of Women Headed Households towards change in farming system in climate change perspective were assessed which revealed that (96%) have changed the agricultural crops to suit in changing climate. Similar findings had been reported by Sarkar and Padaria [12] that though farmers experienced the changing climatic conditions in their life still they were not aware of the term climate change. Further, the findings revealed males (19.00%) to be more aware as compared to female respondents (16.00%). Paudyal et al. [13] reported a similar outcome from their study that men respondents appeared to be more aware of climate change than women respondents.

The findings from Table.2 stated that Education, Information Source Utilization, Land Holding, and Type of family were found to be positive and

significantly correlated with the awareness of female respondents, whereas Farming Experience was found to be positively and significantly correlated with awareness of male respondents. Bryan et al. [14], farmers who did not have access to extension services are more likely to either not perceive climate change or perceive it wrongly. The overall findings reveal that Type of family, Information Source Utilization, and Land Holding had a positive and significant correlation with the awareness of the respondents. Kamala Kant et al. [15] reported that education, social participation, experience in dairying (years), annual income, extension contact, mass media exposure, and preparedness to act were found positively and significantly correlated with the perception of the dairy farmers toward climate variability. Destaw and Fenta [16] reported from their study that age, family size, educational level, farm size, income, livestock holding, access to extension, distance to market, access to climate information, and agroecological zones were amongst the factors that had a significant influence on farmers' choice of adaptation strategies. Similarly, Anseera and Alex [9] observed a significant difference between farmers and extension personnel with regard to the overall awareness of climate change and its impacts.

Table 1. Extent of Awareness of Climate Resilient Agricultural Practices

Category	n1		n2		N	
	Male		Female		Total	
	F	%	F	%	F	%
Aware	19	19.00%	16	16.00%	35	13.00%
Partial Aware	68	68.00%	64	64.00%	139	69.50%
Unaware	13	13.00%	20	20.00%	26	17.50%
Total	100	100.00	100	100.00	200	100.00

Table. 2. Relationship between Socio-economic attributes and Awareness of respondents

S.No	Attributes	Spearman's Correlation Coefficient		
		Male	Female	Total
1.	Education	-0.164	0.367**	0.127
2.	Type of Family	0.156	0.217*	0.193**
3.	Information Source Utilization	-0.097	0.432**	0.210**
4.	Land Holding	0.132	0.264**	0.216**
5.	Farming Experience	0.271**	-0.171	0.016

*- significant at 0.05% level, **- significant at 0.01% level

4. CONCLUSION

The study concludes that most of the respondents were partially aware of these climatic conditions, though most of them knew and have also experienced the impacts of climate change but they were not able to relate it. Most women were unaware of it as they still are lagging behind when it comes to accessibility to proper education and exposure to media and the outside world as compared to the male respondents. The findings also further revealed that awareness of women had a positive relationship with education, information source utilization, landholding, and type of family which shows that if women were given access to these resources, then they would be more aware of the changes taking place. Moreover, it is found that if women are given power and control over the land, they would also be able to use it efficiently for adapting these resilient practices. Whereas in the case of male respondents, experience plays a vital role which shows an experienced male has more exposure to these conditions and they are also able to cope well with the changing climatic conditions. But overall, it was observed that land holding, type of family, and information source utilization have a significant and positive relationship with awareness.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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