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Understanding Women's Perceptions of Promoting Education and Policy Initiatives about Climate Change in Rural Areas of Sindh, Pakistan

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Abstract

Climate change is an inevitable issue of modern world. Women often face greater risk and share greater burden due to their limited adaptive capacity. Studies suggest that knowledge and education can result in better resilience and sustainable development. Climate change education encourages changes in attitude and behavior that leads to better adaptability to climate changes. This paper aims to explore the local women's understanding of climate change education and policy initiatives taken in rural areas. A qualitative exploratory study was chosen for this study. The data collection methodology was through qualitative process. 20 women participants from rural areas of Sindh were interviewed. The finding reveled that women in rural area of Sindh have very low understanding and knowledge of any climate change educational program conducted in their regions. The lack of awareness regarding any climate change policy initiatives was also observed. This lack of awareness was attributed to their low literacy rate, lack of gender inclusiveness and cultural barriers and hindrances. The understanding of these factors at all level of policy making is key for successful climate change education policy.

Keywords: climate change policy, education, Pakistan, rural women, Sindh

Introduction

Interest in climate education grew immensely in the last decade. The main reason behind this is the expanded knowledge and support by leadership in climate education programs and emerging awareness of global climate change impacts in different parts of the world (Adger, Barnett, Brown, Marshall, & O'brien, 2013). Climate change is considered a challenging area of education and researchers debate on the effectiveness of climate change education in different operational settings and populations (Chen, 2011). There are misconceptions about reasons and causes of climate change and its impacts. Climate change awareness and understanding is dependent of various variables like socio-economic conditions, gender, age, and education. Lee et al., (2015) in his paper ranked education as the top predictor of climate change awareness. The educators have a main role in developing this knowledge. But a majority of primary and secondary level educationist engage and limit themselves in delivering information. Their lack of focus on building critical thinking and problem-solving skills that can lead individuals to tackle climate change becomes the main hindrance during the time of action. (Brownlee, Robert, & Jeffery, 2013).

There is agreement among different scholars as to how climate education can be approached differently than the education techniques used for other life sciences and this will need through consideration to ensure effectiveness (Haidt, 2012). The design and development of climate change education programs involves the balancing act of how cultural viewpoints, can shape up the perception and awareness of climate change (Guy, Yoshihisa, Iain, & Neill, 2014).

Another challenge of climate change education is the complexity of engaging different audience (that includes different genders and age groups). Different audience involves different mediums techniques of teaching, youth can be taught in schools and educational institutes, but for adults we must provide appropriate opportunity in community centers etc. Also, the need and type of knowledge varies from audience to audience or with reference to vulnerabilities associated to that audience/ population. The competence of educator to deliver that correct knowledge and help in developing skills is also an important consideration (Monroe, Oxarart, & Richard, 2013).

Pakistan is vulnerable to climate change with various kind of risks and

hazards. In last two decades, Pakistan has witnessed increased intensity of climate induced disasters including floods, droughts, heat waves, decreased agricultural output, health risk and rainfalls. The government have started their efforts in climate education and have initiated and implemented different plans focusing on role of education in climate resilience and creating awareness through formal and informal channels. The climate change policy of Pakistan also emphasis on development of curricula for climate education and its introduction in Pakistan's formal education system (NCCP, 2012).

In the growing interest of climate change education effectiveness, the understanding of perception of climate change education initiatives are needed. The evaluation of policy initiatives and its effectiveness in certain region can be done through familiarity of programs conducted in climate change awareness domain. Also, inclusiveness of all members of society should be ensured. (Martha et al., 2019). Since Pakistan is ranked as the second highest country which has out of school population, and two third of those are females, inclusiveness of women can only be identified by gender-oriented perception research (Ali & Cheema, 2018). In this scenario women's understanding of climate change education and initiatives needed to study in order to make gender an inclusive part of climate policy. Therefore, this study focuses on understanding women's perception regarding climate change education promotions and policy initiatives in the rural areas of Sindh.

Research Questions

1. What are the perceptions of women in rural Sindh regarding any climate change education programs implemented in their areas?
2. How do rural women perceive the policy initiatives and programs that are related to climate change education?

Literature Review

Over the time, climate change education evolved from principles of ecology, ecological sciences and to recent manifestations addressing topics of biodiversity, resilience, and prosperity. But at large we are still in process of understanding climate change impacts and what policies to implement to tackle the problem. It is already an established fact that global climate change can be addressed in two ways. Mitigate and offset greenhouse gas (GHG) emissions and adapt to situations

that are climate change induced and cannot be mitigated (Gillenwater, 2011). Substantial investments have been made to understand causes of climate change and its potential impacts, along with potential work has been done in policy and framework development that can reduces the harmful effect. This emphasis has pressurized the traditional disciplinary areas like education and teaching to create knowledge and awareness.

In order to pursue a better future, developing skills and knowledge regarding climate change an interdisciplinary curriculum is being developed and implemented. (Vincent & Focht, 2010). Majority of these programs are implemented at the university level and yet many educational institutions have to take measures and incorporate climate education in order to prepare future work force. The main objective of climate change education is to combat impacts of climate change collectively. This will be achieved by education, trainings, public awareness and their participations. Participation can only be ensured if understanding of concept and reasoning behind it is clear and the perception of climate change and the results of efforts are well communicated.

United Nations Educational, scientific and cultural organization (UNESCO) and United Nations Framework Convention on Climate Change (UNFCCC) uses term Action for climate empowerment (ACE) that focuses on education and awareness and local population training in priority areas that can help them develop skills to withstand and solve the challenges that arise from global climate change. ACE ensures governments of countries build their resilience by developing and implementing educational campaigns, and by promoting public awareness through formal and informal education. (UNESCO & UNFCCC, 2016).

Intergovernmental Panel on Climate Change (IPCC) explains climate change education as educating people about possible risk, uncertainties, changes that climate variation brings and makes them aware of possible measure that can be taken to combat them (IPCC, 2014). Incorporating and main streaming climate education in current curriculum and formal education is one of the main ways of doing it. Teaching one will have a multitier factor when this information will informally distribute in community (Mochizuki & Bryan, 2015). Many authors argue that climate change education is preparing the current generation to critically understand and adapt to possible risky and uncertain impacts of climate change

(Stevenson, Nicholls, & Whitehouse, 2017).

Climate change is not gender neutral. According to Pakistan bureau of statistics (PBS) women are approximately 50% of Pakistan's population (PBS, 2017). In many developing countries like Pakistan women are more exposed to climate adverse impacts but their coping capacity, knowledge base and representation in decision making is very less. In Pakistan women are generally marginalized due to their social and cultural status. They have limited capacity to engage in community knowledge programs. In rural areas female children are not even sent to school to attend the basic education. There is pertaining risk of overlooking their needs and wants (Ilahi and Grimard. 2000). The understanding of climate education policies or programs to local women needs to be assessed for their effectiveness.

Pakistan has been steadily categorized as the vulnerable region in climate change vulnerability index (Abid, Abid, Zafar, & Mehmood, 2018). The 10 billion tree projects ban on plastic bags etc. are measure that are in progress. Climate education programs are being introduced in schools. Under climate education program 100000 government school students are just engaged and are educated in capital city of Pakistan (Jamal, 2019). These types of programs can only be effective when both gender, males and females have access to basic education equally. In rural areas of Sindh women's mobility or girl's mobility plays an important role (Ali & Cheema 2018). A report by sustainable development policy initiative (SDPI) has documented that women in rural areas spend more time in taking care of household activities then investing their time in education and development (SDPI, 2019).

Pakistan has been ranked as second last country from 2012 to 2014 in gender gap index (GGI). The results are based on four main dimensions and education is one of them (ADB, 2016). At present 58 % girls in Sindh are reported out of school (SDPI, 2019). The main reasons for girls drop out are poor facilities specially sanitations for girls, distances, responsibilities and cultural barriers. Therefore, lack of inclusiveness of gender dimension in planning of education can hinder the overall effectiveness. Education for all is the main ideology for better outcomes. One more reason that has been barrier in disseminating any climate change education is provision of safe transportation for girls living far away, along with lack of female teachers (Ali & Cheema, 2018).

The Government of Pakistan recognize that the women are especially vulnerable to climate change and as anticipated disasters like drought, heat waves and floods are likely to increase (Khan & Forni, 2013). One of the main emerging issue of Pakistan is developing strategies and policies that can capture and mitigate the damages that are arising as the result of climate change. National Climate Change Policy focuses upon development of women resilience through government and community effort (NCCP, 2012). The priority areas identified are training, capacity building, education and promoting awareness against climate change and gender mainstreaming to make a better response strategy (Ahmed, 2013).

In past it has been seen that women's role during climate change induced disaster was commendable (Khan & Forni, 2013). Women when provided timely information and required knowledge they can act as a change agent. Due to their social and cultural responsibilities and their role in society they are the first one to identify the changing environment patterns. Their survival techniques especially in rural areas are more experience based then education oriented (Abid, Abid, Zafar, & Mehmood, 2018). All major current programs focus on sanitation and hygiene knowledge especially in rural Sindh (SDPI, 2019). Initiatives of basic understanding of climate change are still un-clear.

Molthan –Hill, Worsfold, Nagy, and Leal-Filho (2019) argue in their paper that there can be two ways for incorporating climate change education in current programs. One is the mainstreaming in current educational programs and other is developing programs that exclusively focus on climate change in population driven context. Only current ground knowledge can help in making future strategies more accurate and viable. That perception understanding is the main aim of this study.

Methodology

The study area of current research is the province of Sindh, Pakistan. Sindh is second largest populated province (Memon, 2016; PBS, 2017). Qualitative approach was used in this research as nature of the study was exploratory. Qualitative study helps in exploring the different and untouched dimension of phenomena under study and produce in-depth knowledge in limited time. (Cohen, Manion, & Morrison, 2007). Due to the descriptive and interpretive nature of research questions, qualitative study seems to be most appropriate as it is typically conducted in natural setting with a goal to get insight of human settings without manipulation (Denzin, 1994).

Participants

The main participants of this study were women. Twenty women were chosen from rural areas of Sindh. Province Sindh is divided into six divisions and one district from each division was selected except for Karachi division for the study (PBS, 2017). Four women were interviewed randomly from each selected district. Participants were assured for their anonymity for the study. The main limitation of this study was language barrier and resistance from women to participate in study due to their cultural norms.

Instrument and Data Collection

The guide containing semi-structured interview was developed having eight question. The qualitative research technique was employed to evaluate and explore the perception and understanding through interviews (Mark, 2007). In order to analysis and publish data the consent form participants were taken before starting the interview. Since women in rural areas were not very aware of other languages than Sindhi, interviews were taken in native language, Sindhi. For analysis and publishing requirements interviews were later transcribed in English language.

Data Analysis

The study aimed to explore the women perception of climate change education initiatives and policy measures in rural areas. The responses from participants were collected and transcribed for analysis. The thematic analysis was done through manually coding the responses with reference to the meaning generated from interview responses.

Findings and Discussions

The interviews of participants were analyzed and following four themes were extracted from data. (a) Lack of awareness (b) Lower literacy rate (c) Cultural Hindrance (d) Lack of gender inclusiveness.

Lack of Awareness

The participants showed the lack of awareness regarding any educational or policy initiatives in climate change direction. Women during the interviews revealed that they were not aware of any change in curriculum or any new climate change adaptation policy in their areas.

Respondent 8 quoted:

> *"I don't know about any change in educational books, the curriculum is same old no new thing has been taught to my daughter apart from that I read in my school days."*

Respondent 10 added:

> *"No new policies are being implemented I have not heard of them."*

The changes in formal education system if made were not very clear to many of respondents. The books and curriculum are still the same and no major steps have been observed by respondent in this direction. Same is the case with any climate change policy initiatives. Women were unaware and were not able to recall any campaigns in recent past. The knowledge base of women was mostly perception based. As respondent 12 quoted:

> *"Why will they teach us about weather change, we can feel the summers hotter and less rain ourselves."*

Thus, we can conclude that the any educational programs or policy initiatives were not reached to the local women.

Lack of awareness results in weakening the resilience of system and highlight the possible flaw in steps of its implementation. Authors suggests that it may not be necessary to develop a separate course for climate change education, but as Boon (2016) suggest in his study the nature of climate change science is interdisciplinary thus this can be easily taught in all the subjects just by incorporating its dimension in any subject. It has been observed that the traditional content and delivery approach in climate change is completely inadequate (Fahey, Labadie, & Meyers, 2014) and new curriculum and delivery approaches are to be identified.

During interview one participant, a government school teacher in secondary girl's school quoted that:

> *"Even trainers need training, if I don't know about climate change what will I teach."*

Researchers are discussing about educating teachers first. The concerns of lack of time and material to teach about climate change and its adverse impact is reported by teachers (Nicholls 2016). The lack of awareness on both student and educators' part was evident factor that hinder climate change education.

Lower Literacy Rate

Lack of climate change knowledge is likely associated to lower literacy rate in the region. During research the lower literacy rate came out to one of the resultant themes. Women limited mobilization and lower literacy rate impact their knowledge development as respondent 2 quoted:

> *"My son goes to college if you want to ask something ask him, my girl is never being to school, what will she know."*

Same was highlighted by respondent 20:

> *"My brother attended the school I need to help mother at home that is why I am uneducated."*

The lower literacy rate acts as the main reason why women do not perceive that climate change is important for them. There comes the concept of '*Bsocial holistic learning process*', which talks about developing flexible and agile learning that focuses on disseminating knowledge with action-oriented task (Kagawa & Selby, 2010). This new way focuses on non-formal trainings and education programs that focuses on out of school population. The programs that focus each domain that can be impacted by climate change be it agricultural, personal practices, pollution control and hygiene. They are all based on participatory and inquiry-based learnings.

As one respondent suggested that:

> *"Why don't they develop programs that focus women in home rather than school, here in our village mostly girls don't go to school."*

The informal education programs will not only provide the required knowledge to those who need it the most but also uses the education platform to

overcome hopelessness of uncertainties. This focus on vulnerable population will result in behavioral changes and will shape their response strategies to climate change. Dillon, Stevenson & Wals (2016) in their research also highlighted the up need of non-traditional hybrid teaching practices that engage community as whole and not just one part of it. Community should know the alternative ways of resources conservation and preparedness against natural calamities by learning emerging practices.

UNFCCC established the inevitability of climate change education in multiple sectors. The prioritized key areas are community awareness, access to information and community participation. Lack of substantial progress is recognized as the main issue of climate change educational programs and awareness campaign (UNFCCC, 2015). Therefore, climate change educational programs and educators must bring a range of formal and informal practices to make the effort successful.

Cultural Hindrance

The participants focus was also on the cultural values and how they hinder women participation and generate knowledge gap. This arise as the separate theme of research "Cultural Hindrance".

As Respondent 3 worded:

"Women are supposed to take care of home why they need education."

It was also highlighted strongly that women for their wellbeing are dependent on men and preparing for any calamity was not an option for them as they think the men in house have responsibilities to rescue them which was also explained by respondent 9:

"We don't need to understand what will happen if disaster occur, our men should know they will be there to help us."

Women in rural areas have secondary standing within homes. Even though it is observed that females can deliver better human capital outcomes because their knowledge can directly be useful as they are responsible for making family

choices in day to day matter. Despite Pakistan's consciousness for women rights under international conventions and legal frame works, the ground realities are very different. The cycle of subjugation continues, and women are still at overall low economic, political, and social status when it comes to their personal wellbeing (GEP, 2012).

The gap between environmental related emotions and beliefs make it difficult to change attitudes and behaviors only through formal policies and education reforms. Due to these researchers argue that actions through education might be approached differently (Stevenson, Nicholls & Whitehouse, 2017). This may include combatant resourcefulness and effects that advance and coherent both optimism and apparition for how climate change and education can be transported into fruitful configuration, so that action can speak louder than words. The ineffectiveness of current practices can be highlighted by response by one participant who said:

"Policies are for men to follow; I don't think we need to know about it."

The understanding of cultural dimension of population, their norms and practices will result in better information spread. Therefore, climate change education practices from environmental psychology perspective will have a broader impact (Young, 2018). Researches have suggested that good climate change education practices focus on audience segment, addressing their misconceptions and highlight the significance of learning (Howell and Allen, 2019). In local context this can be achieved by multidisciplinary approach and community-based projects.

The climate change education policies perform better if its scope and approaches are in consideration to local conditions. This brings the attention towards the curriculum development that should incorporate the cultural values of implementation areas (Reid, 2019). Biesta (2013) explains it as socialization domain of content development. This focuses on ways education become part of existing traditions and culture and bring authenticity and sustainability in communities.

Lack of Gender Inclusiveness

There seemed to be a strong agreement about lack of gender inclusiveness in any climate education and awareness program or in policy initiatives.

As worded by respondent 13:

> *"I would have sent my daughters to any campaigns, but they are all male teaching about new things, so girls are not safe like this."*

Respondent 14 added:

> *"The boys school have these programs; my son learns about water saving in school but my daughter college, they did not tell them about that."*

Researchers argue the curriculum and campaigns should not work on collective avoiding of any population group and should frame ecological literacy for empowering every individual in community (Reid, 2019). Long distances of schools and college, lack of basic infrastructure and availability of female teachers are main issue of current education system (UNESCO and UNFCCC, 2016). In Sindh's case the lack of women inclusiveness in any climate change campaign leads to very less response from female gender and adds on to their knowledge gap.

According to a respondent:

> *"All this information is mostly talked in Autak (men community meeting place) women are not allowed there."*

Here comes the role of policy makers to ensure that mechanism that is employed includes all the possible segments of population to address. The role of policy makers is not just to make a document but to developing policy that should understand the long-term impact of climate change education program and inclusiveness of all stakeholders. The success of picture-based education programs in South Africa showed that women who are not part of formal education can learn through other ways (Davies, 2009). Even though the efforts are being made to endorse gender parity but still gender based differences exist (Parry, 2016). While women play a vital role in agricultural sector especially in Sindh and Punjab, yet they have very limited access to information due to methodology use for information sharing. Lack of women trainers is also one of the important issues.

Conclusion and Recommendations

This study enhances the understanding of gender perception regarding climate change education and identifies the knowledge gap prevailing in rural areas of Sindh. The results indicate that for enhancing capacities of local women, educators and policy makers must think about ways of incorporating both formal and informal techniques that harness the creative thinking and decision making. Lack of awareness highlighted the limitations of information sharing that are either related to lower literacy rate, cultural hindrances and lack of gender inclusiveness in current initiatives. Findings of this research specify the necessity of educational and psychological intervention with gendered perception in current and future policy making in order to increase the climate change literacy and knowledge sharing.

As far as current climate change education and policy initiatives are concerned, results strongly suggest that:

1. The informal climate education system and training programs should be implemented in rural areas and investment in developing gender specific training programs are needed.
2. Looking at the multidisciplinary nature of topic, the need of curriculum upgradation is needed. A hybrid model, where every curriculum incorporates environmental and climate change studies specific to subject area can be opt rather than developing a separate subject.
3. The lack of gender inclusiveness at various level can be reduced by conducting trainings and workshop focusing women. Education policy should incorporate the gender dimension to facilitate the maximum awareness.
4. Content of training courses and their delivering methodology should consider the women's cultural and societal values to avoid possible hindrances in knowledge sharing process.

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