

RESEARCH ARTICLE

Climate Change Intersecting Socio-economic Vulnerabilities of Kalash Indigenous Community in Northern Pakistan

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Abstract

Climate Change has a significant effect on all walks of life or human activities across the world. However, indigenous communities in different parts of the world are more susceptible to the worst effects of climate change due to their dependency on natural resources. Climate change directly affects natural resources such as forests, water, grazing land, bio-diversity and traditional foods of indigenous communities. This study explores how climate change overlaps or intersects the socio-economic, and bio-cultural marginality of the Kalash indigenous community, living in northern Pakistan. The qualitative research paradigm was used to explore how climate change overlaps or intersects the socio-economic marginality of the Kalash Indigenous community. It reveals that climate change has significantly affected natural resources such as water, biodiversity, forests and crops of Kalash's indigenous community. Climate-induced natural disasters affected their livelihood resources and compelled them to migrate or be displaced from their native town. It reveals that climate change also affects women's marginality in Kalash's indigenous community. It also reveals that climate change overlaps and intersects with the socio-economic marginality of Indigenous communities and policymakers should give priority to indigenous communities who have a dependency on natural resources to protect them from the worst effect of climate change across the world.

Keywords: Climate Change; Kalash Indigenous Community; Natural Resources; Intersectionality; Socio-economic Marginality

Introduction

Changes in temperature, greenhouse gas concentration and variations in weather patterns significantly affect human activities across the world (Forster, Smith, Walsh, Lamb, Palmer, von Schuckmann, & Zhai, 2023). However, variation in weather patterns or climate change has a direct impact on rural or indigenous communities because they have a dependency on natural resources. For their livelihood, they are dependent on forest, rainwater and traditional food. However, Indigenous communities face the worst effects of climate change in different parts of the world and their dependency on natural resources, traumatic colonial history and worst post-colonial policies make them more susceptible to its worst effects (Lansbury Hall & Crosby, 2022). Hence, climate change intersects or overlaps with their socio-economic marginality.

It is believed that Indigenous communities comprise six per cent of the global population. However, they care about eighty per cent of the world's biodiversity or natural resources (Brubacher, Chen, Longboat, Dodd, Peach, Elliott, & Neufeld, 2024). Indigenous communities lost medicinal plants that badly affected their health and they used different medicinal plants for the treatment of various types of diseases (Redvers, Aubrey, Celidwen, & Hill 2023). Moreover, climate change disturbs the rain cycle, causes flooding, and affects the biodiversity and livestock of the indigenous communities and these effects overlap or intersect indigenous communities' marginalities. Moreover, climate-induced disasters affect crops, livestock and agricultural and grazing land of indigenous communities. Briefly, climate change has disturbed all walks of life and livelihood resources. Climate change like other indigenous communities affects the livelihood resources of Kalash indigenous people. The Kalash Indigenous community live in the mountainous region of north-west, Khyber Pakhtunkhwa Pakistan. The population is 3000 thousand to 4000 thousand of the Kalash indigenous community (Ishaq & Ghilzai, 2020). They live in a hostile (both social and physical) environment that poses numerous threats to their survival including climate-induced disasters. Bio-diversity loss, disasters, and displacement threaten their physical and cultural survival. It is observed, that the Kaslash indigenous community population has been decreasing and facing the worst kind of socio-political and economic problems. Pakistan as a state has failed to protect the rights of this small ethnic and religious indigenous community (Siddiqui, 2023). They uphold polytheistic beliefs, distinctive culture, and social setup within a predominated Muslim state. They have been facing various socio-economic problems in Pakistan.

The majority of the Kalash indigenous community lives under the poverty line. The government of Pakistan in the post-colonial period has failed to address the socio-economic and survival issues in their native places. Kalash's indigenous community has been facing the worst of discrimination in socio-economic, and political matters in Pakistan. The British colonial regime in the colonial era and Pakistan in the post-colonial era did not initiate any program to address their socio-economic vulnerabilities (Kalash, 2022). Kalash's indigenous community's colonial history and post-colonial suppression further intersect their marginality. The injustices they faced in the past, and also the post-colonial period make them more vulnerable to climate change (Bicker, Ellen, & Parkes, 2003). It is argued that climate change further intersects their marginality (Karrar & Mostowlansky, 2018). It intensifies pre-existing vulnerabilities of the Kalash community. Moreover, climate-induced disasters increase the ratio of displacement from their native town. They have lost their cultural values and traditions due to climate-induced displacement. Hence, this research article focuses on how climate change overlaps or intersects with the Kalash indigenous community's vulnerabilities. This research article also explores the climate change impact on their limited livelihood resources such as forests, domesticated animals, agricultural land, grazing land and crops. Intersectionality theory is applied to understand climate change's intersecting impact on the Kalash indigenous community.

Kalash Indigenous Community and Their Ways of Life

As mentioned above, the Kalash indigenous community lives in district Chitral, Khyber Pakhtunkhwa, Pakistan. They live in mountainous and difficult geographical terrain. Their geographical region is prone to land sliding especially in monsoon season (Choudhry, Golden, & Sang-Ah Park, 2024). Kalash people speak the Kalasha language (it is known as Kalasha-mun) and belong to Indo-Aryan stock. They have unique religions, customs, traditions and food. The Kalash people are the followers of the traditional Kalasha religion which is a form of animism and ancestor worship mixed with ancient Hinduism. They have a distinctive socio-cultural and religious identity. Moreover, in their native town, they are dependent on natural resources such as timber, crops, fruits and domesticated animals (Uddin, 2019). Agriculture is a main source of livelihood but they have

limited low land and mainly live in mountainous regions. Variations in weather patterns or rain cycles create problems for them to find pasture for domesticated animals. Variation in the rain cycle has a direct impact on the grazing land. Moreover, they cultivate wheat, maize, vegetables and different types of fruits. These are the cash crops of Kalash's indigenous community. They purchase agricultural products in the local market (Fentz, 1996). However, climate change has significantly affected their productivity and it barely fulfils their family needs now. They have no cash crops now. They face problems in fulfilling other needs after the worst effect of climate change on their agricultural products. They used trees for heat or domestic use and purchased timber in the local market. Many Kalasha community members are doing timber or fruit business. However, the scarcity of trees or forests often causes conflict among the Kalasha community. They are leaving the timber business and this business is not enough to fulfil their family expenditure (Zeb, Hamann, Armstrong, & Acuna-Castellanos, 2019). Moreover, the family is the basic unit and performs economic and security functions. Family institutions perform socio-economic, caring and caring of children functions. The majority of them live in joint families but some of Kalash's indigenous community members live in nuclear families as well (Ali & Chawla, 2019). They have a patriarchal structure, where men make major decisions. However, it is not a strict type of patriarchy and women are allowed to take part in all walks of life. They have strong family ties and social networks. Moreover, in religious or wedding ceremonies, traditionally they knock goat and sheep meat or any other traditional food. Moreover, they used different plants as a traditional medicine and they live in remote areas and have no easy access to medical facilities in their native places. They cannot afford health expenditures and also cannot afford the educational expenses of their children (Parkes, 1987). In short, they have been facing socio-economic and political problems. The following line explains the theoretical framework of this study, and how climate change overlaps or intersects with the existing socio-economic problems of the Kalash indigenous community.

Theoretical Framework

Indigenous communities are dependent on natural resources as mentioned above. However, climate change directly affects the natural resources that intersect the socio-economic vulnerability of indigenous communities. Hence, the intersectional theory presented by Kimberlé Williams Crenshaw in 1989 provides theoretical insight to this study (Carastathis, 2014). The intersectional theory refers to socio-cultural or environmental factors that overlap or intersect with associated oppressive, dominating, or discriminatory systems (Kaijser, & Kronsell, 2014). This theory provides theoretical insight to understand the climate change effect on the already marginalized position of the Kalash indigenous community living in the periphery of Pakistan. Kalash's indigenous community remained oppressed in the colonial and post-colonial eras. They have also been facing discriminating policies in the post-colonial times after the emergence of Pakistan. They live under the poverty line and do not have access to health and educational facilities in their native region. Climate change further intersects with their already marginalized position. Therefore, the theory of intersectionality provides theoretical insight into this study of how climate change overlaps or intersects with the oppressed or marginalized position of the Kalash indigenous community.

Methodology of the Study

A qualitative research paradigm was used to understand the climate change effect on the Kalash indigenous community. The data was collected through participant observation and in-depth interviews with both men and women. Climate change differently affects men and women, therefore, the primary data was collected from both men and women of Kalash indigenous communities. Moreover, the primary data was thematically analysed to understand the climate change effect on the Kalash indigenous community living in northern Pakistan. The

primary data juxtaposed with the secondary data to understand the climate change interaction with the socio-economic marginality of Indigenous people living in the peripheries in the different parts of the world.

Theorizing Effects of Climate Change on Indigenous Communities

Indigenous communities are more vulnerable to climate change (Datta, & Kairy, 2024). They lose their traditional knowledge due to rapidly changing ecological conditions. Climate change increases the risk of food insecurity and also significantly affects the traditional foods of indigenous communities in different parts of the world (Reyes-García, Álvarez-Fernández, Benyei, P., Calvet-Mir, Chambon, M., García-del-Amo, and Tofighi-Niaki, 2023). Moreover, climate change creates scarcity of water and also causes climate-induced disasters which significantly affect indigenous communities. Climate-induced disasters relocate them from their historical homelands (Ngcamu, 2023). As a result of relocation, they lose their traditions, customs and traditional knowledge.

Displacement from the native town also affects their indigenous resilience to climate change. It is believed that Indigenous resilience is entrenched in the culture and environmental heritage of Indigenous communities. Indigenous resilience to climate change is also embedded in their social and geographical history, spiritual values, traditional ecological knowledge, and worldview (O'Rourke, J. 2023). Climate-induced displacement affects not only their food, and livelihood but affect their resilience to climate change (Balbi, 2024). The socioeconomic marginality of the indigenous communities further intersects with their vulnerabilities of indigenous communities. Moreover, the majority of Indigenous people live under the poverty line due to their traumatic colonial history. It is important before assessing climate change to understand the colonial history of indigenous communities. They faced the worst colonial policy; and discriminatory policies in the post-colonial period (Datta, Chapola, Waucaush-Warn, Subroto, & Hurlbert, 2024). Indigenous communities across the world face extreme poverty; substandard and inadequate housing; a lack of health and community services, food, infrastructure, transportation, and education as well as historical and current institutional and policy issues related to Native resources (Howitt, 2020). The Kalasha indigenous community has no access to their indigenous resources and Pakistan as a state does not recognize their rights to their indigenous resources. Climate change further intersects their vulnerabilities. Moreover, indigenous communities are also vulnerable because their physical, mental, intellectual, social, and cultural well-being is traditionally tied to their natural environment and native land. Hence, they depend on the land and resources for basic needs such as medicine, shelter, and food (Parsons & Fisher, 2022). As a result of the change, they lose their bio-diversity which significantly affects their health. Therefore, climate changes exacerbate many barriers to providing for these human needs. Climate change also makes it difficult for them to give an adaptive response to the worst effects of climate change. The following line specifically explains the socioeconomic vulnerabilities of the Kalasha community living in the northern part of Pakistan.

Kalash Indigenous Community Socio-economic Conditions in Colonial and Post-colonial Periods

Kalash indigenous people like other indigenous groups such as Pashtun also faced discrimination in the British colonial period (Ishaq, & Ghilzai, 2020). Moreover, their culture and religion were stigmatized both in the colonial and also in the post-colonial period. The British colonial regime completely ignored development in this region and colonial policy in this region was security-oriented rather than development. Kalash indigenous people were completely ignored in the colonial era and colonial injustices reinforced socioeconomic vulnerabilities in this region. Pakistan as a state in the post-colonial era continued the British security-oriented policy (Sengar, & Adjoumani (Eds.), 2023). In this regard, Kalash Indigenous community members stated that

“the British completely ignored this region and the post-colonial era, Pakistan as a state also deliberately ignored this region Javeed (Individual Interview, 21 March 2024)”

The British imposed the worst policies for peripheries or in the name of settled or unsettled regions (Khter, and Ghalib, 2015). However, in the post-colonial era, Pakistan also continued the same policy in this region and did not initiate any developmental program for the Kalash's indigenous people. Moreover, in the post-colonial era, Pakistan as a state failed to protect the rights of Kalash's indigenous community, minority ethnic and religious groups they are facing various socio-economic problems in their native places (Zeb, Armstrong, & Hamann, 2019). Therefore, the majority of the Kalash indigenous community is living under the poverty line because of the indifferent attitude of the state towards the solution to their socio-economic problems (Khan, 2023). Kalash indigenous community has limited economic opportunities, and livelihood resources and climate change further creates socio-economic issues for them. The Kalash people also face problems preserving their religious and cultural heritage amidst the influence of the majority and a changing world. In the post-colonial period, Pakistan as a state failed to protect this indigenous community from religious extremism, and socio-economic exploitation. The majority of them are dissatisfied with development projects in the region. Hence, in the post-colonial times, the Kalash people face many challenges that increase their socioeconomic vulnerabilities. However, climate change further jeopardizes their future in their native region. The following lines explain the climate change impact on the existing livelihood resources of the Kalash indigenous community.

Climate Change Impact on the Kalsha Indigenous Community

As mentioned above, the Kalash indigenous people live in difficult geographical terrain in the north-west of Khyber Pakhtunkhwa, Pakistan. They are dependent on natural resources such as forests, rain, domesticated animals, agriculture, and fruits (Abdul Aziz, Ullah & Pieroni, 2020). Climate change has directly affected their natural resources and threatens their bio-cultural heritage. Climate change increases their socioeconomic vulnerabilities because for livelihood they are dependent on the natural resources in Kalash Valley. For instance, plants or bio-diversity in this region are badly affected by climate change. Climate change also affects medicinal plants which affects the health care, income and culture of the Kalash indigenous community. Climate change affects the natural forests and jeopardizes Kalash's Indigenous community's future because they have no other option to protect themselves from extreme winter. They are using trees for heating. Climate change affects their livelihood resources. In this regard, Kalash community member stated that

“I saw snowfall and unexpected rain in our native town in April for the first time. This variation in the weather pattern and rain cycle affected our ways of life. Climate change affected the livelihood resources of both men and women in our native town” Zarmeena, (Individual Interview, 25, March 2024).

Variation in the rain cycle creates the possibility of extreme weather, flood and drought. Agriculture is the main source of their livelihood and variation in the rain cycle badly affected their crops. They have no irrigation land (Sher, Al-Yemeni, & Sher, 2010). Moreover, domesticated animals are the basic sources of their livelihood. Climate change has a significant effect on grazing land, it is difficult now for them to manage pasture for domesticated animals. Extreme weather not only affects their houses but also affects their animals Moreover, natural disasters such as flooding due to climate change also cause soil erosion which badly affects the plants, crops and grazing land of the Kalash indigenous community. It also disturbs the traditional biodiversity in this region (Bellard, Bertelsmeier, Leadley, Thuiller, & Courchamp, 2012). Climate change affected the plants they

were using for the different types of diseases of humans and animals (Weiskopf, Rubenstein, Crozier, Gaichas, Griffis, Halofsky & Whyte, 2020). In this regard, one community member stated that;

"Climate change affected our livelihood resources and we are dependent on our natural environment and variations in weather patterns, rain cycle affects our means of livelihood in our native places, Sujeel (Individual interview, 24 March 2024).

Moreover, as mentioned above, they are not only dependent on forests for domestic use but timber is the main business of the Kalash indigenous community. Their dependency on forests for domestic use causes deforestation in Kalash Valley. It is believed that deforestation is also one of the reasons for climate change (Zeb, Hamann, Armstrong, & Acuna-Castellanos, 2019). Moreover, they are living under the poverty line as mentioned, they cannot afford climate-resilient seeds. Therefore, climate change has badly affected their crops (Aich, Dey, & Roy, 2022). It is important to provide them with climate-resilient seeds and increase the adaptive capacity and resilience of Kalash's indigenous community formers. However, the Kalash indigenous community cannot afford climate-resilient seeds (Shilomboleni, Recha, Radeny, & Osumba, 2023). In this regard, one of the community members stated that;

"climate change has a significant effect on our crops, especially wheat. Formers of our community need climate resilient seeds and informal training of the local farmers to educate them about climate resilient forming Roshmina (Individual interview, 24, March 2024).

Moreover, extreme weather causes health problems in domesticated animals. Climate change reduces grazing land and pasture but also affects the health of animals, especially goats and sheep. The Kalasha community who are dependent on domesticated animals, changed their profession (Ingold, 2002). Moreover, the mining industry also affects the grazing land (Haq, Kontakiotis, Janjuhah, Rahman, Tabassum, IKhan, & Jamal, 2022). More often than not mining sites create landsliding hazards for the local community, especially for pastoral communities and also for animals. Kalash indigenous people face multifaceted issues due to climate change in their native places. They are uneducated and do not have the modern skills to search for new livelihood resources. Therefore, climate change overlaps or intersects with their socio-economic marginality. The following line explains how the climate change effect intersects their marginality.

Climate Change Intersectiong Socio-economic Marginality of Kalasha Community

Various socio-economic, and political factors make Indigenous communities more susceptible to the worst effects of climate change (Abate, & Kronk, 2013). Indigenous communities are dependent on natural resources and do not have the modern technology and institutions to face the worst effects of climate change. They rely on their indigenous institutions and resilience to cope with climate change. It is believed that indigenous communities are already socio-economically marginalized due to their colonial history and exploitation and climate change further intersects their marginality (Nightingale & Rankin, 2014). The colonial injustices and post-colonial exploitative policies reinforced poverty in this region and they have limited resources in their native town. Forceful conversion, political instability, and religious extremism have brought demographic changes and displaced many Kalash indigenous people from their native places. Climate change further intersects or overlaps with their existing socio-economic vulnerabilities. In this regard, Indigenous community members stated that;

"the colonial regime and in the post-colonial period our community has not been supporting and these states failed to initiate any developmental program for our people. Therefore, we are facing a multifaceted socio-economic problem. However, climate change further makes us socio-economically vulnerable" Akhtar Wali (Individual Interview, 21 March 2024).

Climate change further affected their local livelihood resources especially their natural resources (Sperber, 2014). Climate-induced disasters displaced Kalash's indigenous people and they have limited land and faced the problem of resettlement. Along with the climate-induced displacement, scarcity of resources, and forceful conversion are considered reinforcing factors of their displacement from their native places. Almost in every monsoon season, flash flood affects their crops, animals and houses. Heavy rain and flash floods damage their homes. They have limited land to build their houses in safe places. In this regard, one Kalash Indigenous woman stated;

"Climate change affected our resources and we women face problems even though we do not have safe places to wash our clothes and it is also difficult for us to bring pasture for our domesticated animal" Aleena (Individual Interview, 19 March 2024).

Climate change also intersects or overlaps with women's marginality. As compared to men, women of the Kalash indigenous community face multifaceted issues. Climate change-induced disasters also differently affected women because during displacement they are more exposed to physical and sexual violence. Along with women, men cannot afford the expenditure of their families. Climate change affects their local resources and now they are compelled to leave their native place in search of livelihood resources. Therefore, climate change intersects with Kalash's Indigenous community's socio-economic problems. They were already deprived and lived under the poverty line. Climate change further intersects their socio-economic vulnerabilities and jeopardizes their future in their native places.

Conclusion

This study focuses on the socio-economic vulnerabilities of the Kalash indigenous community. It is revealed that Kalasha's indigenous community has faced numerous socio-economic challenges in their native town. It reveals that climate change further intersection their socio-economic vulnerabilities. Kalasha's indigenous community already live under the poverty line. The climate further overlaps or intersects with the vulnerabilities in their native town. The theory of intersectionality provided theoretical insight to this study. Climate change intersects the vulnerability of the Kalash indigenous community. The colonial policy in this region was security-oriented and ignored socio-economic development. Pakistan also has failed to initiate a developmental program for the Kalash indigenous community. Their historical, as well as post-colonial policies reinforce socio-economic marginality. However, climate change intersects or overlaps the socio-economic marginality of the Kalash indigenous people who live in the northwest of Pakistan.

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Ethics approval/declaration: I strictly followed all research ethics during collection of data.

Consent to participate: I took consent from all partipants of this study.

Consent for publication: We given consent for publication

Data availability: Data is available upon reasonable request from the corresponding author

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