Environmental and Climate Change Education for The Youth to Foster Social Transformation: Case Study in MTs PAKIS Banyumas, Central Java

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Abstract. This study aims to assess the effectiveness of the school's environmental education and climate change programs to offer suggestions for enhancement in MTs PAKIS (Islamic Junior High School of PAKIS). The study used interviews and observations to collect data for students, administrators, and parents, which was analyzed using qualitative methods. MTs PAKIS is an educational institution situated in a geographically remote region, with a primary emphasis on imparting knowledge to young individuals on environmental matters and climate change. This is achieved by integrating local wisdom and utilizing available resources within the surrounding hamlet. Students are provided with various academic disciplines encompassing agriculture, agroforestry, animal husbandry, biodiversity, and climate change. This educational experience equips individuals with essential skills and knowledge that may be efficiently applied in their future pursuits. The research found that educational institution has demonstrated efficacy in imparting knowledge and deterring early marriage and urban migration. It serves as a valuable foundation for prospective social transformation, fostering improved lifestyles regarding economic prosperity and environmental sustainability. Despite their achievements, educational institutions must prioritize teacher retention for long-term viability since they need help maintaining a stable roster of volunteer teachers.

Keywords: climate resilience, environmental education, educational effectiveness, junior high school, social transformation.

1. Background

Climate change is one of the most pressing issues confronting humanity and our planet today. We have seen rising global temperatures, drastic shifts in weather patterns, melting polar ice caps, rising sea levels, and major threats to biodiversity in recent decades. Climate change is a worldwide problem that affects every element of human existence and the environment [1]. All of these problems are directly related to human activities that result in greenhouse gas emissions and significant environmental damage. Climate change education is an urgent need in responding to this challenge because it will raise awareness of the impacts, provide a scientific understanding of responsibility, encourage collaborative action, and create future generations through social transformation. Education must be used to prepare and empower students to understand their roles and develop their competencies for sustainable living [1].

Environmental education introduces values and concepts to develop the skills and attitudes required to comprehend and respect the relationships between culture and the biophysical environment [2]. Environmental education also involves behavioral patterns in making decisions about environmental quality issues. Meanwhile, climate change education is defined as education that examines the causes and consequences of climate change adaptation and mitigation, and what needs to be taught are information and understanding, skills, as well as values and attitudes toward climate change [1].

Several previous studies on environmental education or climate change education focused on how women (mothers) can become environmental educators for children and the community through non-formal organizations such as Integrated Health-Service Post (posyandu), socio-cultural groups, and non-governmental organizations (NGOs) [3]. Teachers who introduce and implement environmental education are hampered by a lack of a learning model to use as a reference; a contextual inquiry-based learning model can improve early childhood knowledge, attitudes, and skills in environmental aspects [4].

One method to close the climate change information gap is to improve literacy, particularly among teens, so that they are more motivated to participate and play an important role in efforts to mitigate the effects of climate change [5]. Adolescents and students have probably heard of climate change. Even so, only a few can correctly explain the definition and reasons, leaving students unaware of the global issue of climate change [6]. A study conducted in England discovered that the majority of student responses focused on content knowledge about climate change and its negative consequences, resulting in expressions of fear for the future and frustration because teenagers' actions were not appreciated; only a few students displayed positive emotions, such as excitement towards the earth [7].

Several previous studies show that research on climate change education has not been extensively explored, particularly in terms of how climate change education is practiced in schools, the impact it has on the younger generation, and what they must do to deal with it, as well as how the process of social transformation occurs during education. Because the environment and climate change are used, this article is contextualized to show how students in their twenties learn about climate change, field practices, what needs to be done, and what processes of social transformation change occur when all of these practices are carried out in a small village on the southern slopes of Mount Slamet in Central Java Province.

Climate change education is essential for pupils to learn. Furthermore, teenagers in Junior High School (JHS) have variable psychological conditions. This is associated with the start of puberty, which leads to adolescence. The educational strategy for junior high school students differs from that of children's education (pedagogy), but it must still be applied in the adult education approach (andragogy). As a result, a specific approach customized to the age group is crucial.

The Indonesian Ministry of Religion oversees the *Madrasah Tsanawiyah* (MTs) education system for junior high school-age children. The school offers a significant curriculum based on Islamic beliefs, with religious subjects accounting for 17% of the classes offered. The MTs curriculum and education system have long been built on the country's philosophical foundation, notably "Pancasila" or "Five Principles," particularly the First Principle: Belief in One Almighty God.

In recent years, there has been substantial progress in the development of environmental education. Since the early 2000s, it has become common for schools in Indonesia to integrate environmental education into the curriculum, often with local content or characteristics. This is in contrast to MTs PAKIS, which emphasizes practical and usable parts of applied ecological education. This school is distinguished by the theme of agroforestry-based MTs because almost all of the students that attend school are children from the nearby forest. As a result, teaching at this school makes use of the natural circumstances of the surrounding environment as a learning medium as well.

2. Materials and Methods

This study was carried out at Gununglurah Village, Cilongok District, Banyumas Regency, Central Java Province, near the forest's edge on the slopes of Mount Slamet. The study was carried out between July 2022 and July 2023.

Observation and in-depth interviews were employed as research methodologies. The researcher interacts directly with the community group to be investigated in a detailed statement. The research targets include MTs PAKIS students, MTs PAKIS managers, and volunteers who deliver education to learners on a daily basis, and parents of MTs PAKIS students. The subjects of this study were all MTs PAKIS students, a total of 21 participants consisting of 14 males and seven females consisting of eight students from class VII, seven from class VIII, and six from class IX students.

Meanwhile, seven students, five females, and two males were interviewed in depth. The parents of the students interviewed were two (female) parents of two students, and the school administrators interviewed were three people: one founder and two teachers who were former MTs PAKIS students, male, and female (who are now students in high school equivalent education packages), which aids the learning process for MTs students. A 29-year-old female teacher in charge of administration at MTs PAKIS and honorary early childhood education (PAUD) instructor. Meanwhile, the 22-year-old male teacher is an MTs PAKIS alumnus from the first batch who is now able to assist with the teaching process at MTs PAKIS as the person responsible for plants, notably coffee, maintenance, harvesting, processing, and marketing.

This research employs descriptive qualitative methodologies, including the following stages: preparation, data collecting, data analysis, and study creation. The research focuses on three types of data: program performance, educational efficacy, and existing difficulties. The parameters given out in the Action for Climate Empowerment guidelines [8] are used to measure the performance of climate change education initiatives. Education, training, public awareness, public access to information, public participation, and international cooperation are among them. The instructions provided to educators are used to assess the success of climate change education in the second variable. The following changes were made to the Guidelines for Excellence in Professional Development of Environmental Educators [9]: 1. Climate change literacy; 2. Basic understanding of climate change education; 3. Climate change responsibility; 4. Climate change education planning and implementation; 5. Development of inclusive learning; and 6. Assessment and evaluation. The third variable concerns the difficulties (challenges and impediments) encountered. It is carried out to collect representative data and make judgments. This method outlines in detail the obstacles and barriers to climate change education.

Student evaluation is also required to determine the effectiveness of the education delivered. The Excellence in Environmental Education: Guidelines for Learning (K-12) clarifies the accomplishments required to see the efficacy of student learning [9]. This guide is designed for three age groups: elementary school (fourth grade), junior high (eighth grade), and high school (twelve grade). Because the study was limited to junior high school students, the following accomplishments must be reviewed: 1. Questioning, analysis, and interpretation skills; 2. Knowledge of processes and systems related to climate change; 3. Ability to understand and solve problems caused by climate change; and 4. Personal and state responsibility for climate change. The diagram (Fig.1) depicts the study framework schematically.

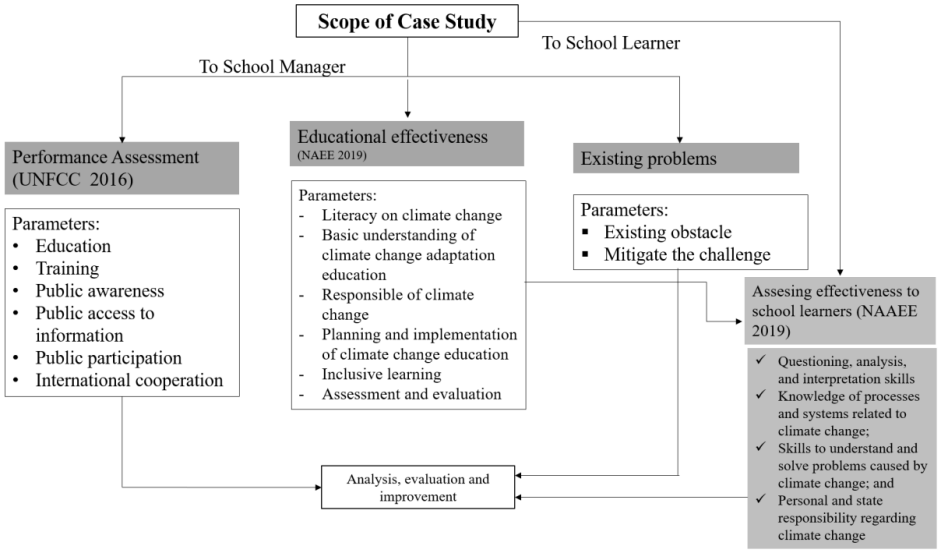

Fig. 1. Research Framework

3. Results and Discussion

3.1 Geographical and Socioeconomic Conditions

MTs PAKIS is located in Gununglurah Village's Pesawahan hamlet. The site is situated opposite the state-owned forest company (Perhutani) production forest area. This site is surrounded by mountains with a steep slope. This location is likewise located on a volcanic ridge that was produced by unstable volcanic eruption deposits with a steep slope resulting from volcanic material deposits, this area is prone to landslides if its hydrological system is disturbed. This area receives more than 3000mm of rain yearly and is the upstream area of multiple rivers [10, 21].

Landslides are a disastrous occurrence that frequently occurs in Indonesia as a result of the region's natural terrain, alterations, or damage to the hydrological system, accompanied by heavy rainfall. Another common cause is excessive land usage, which disregards the character of the location by ignoring the climatic conditions of the area. The research found that the Cilongok District is prone to landslides. Landslides occur practically every year in Gununglurah Village. Gununglurah Village features two geological units. The first is volcanic rock from Mount Slamet, which contains breccia material from molten lava and tuff. This section covers the majority of the village and is made up of mountains and hills. Meanwhile, the other component is a lava unit comprised of many layers of soft lava. These layers can be easily separated from one another [10].

Gununglurah Village, with its steep, mountainous topography at an elevation of 400 to 900 meters above sea level and significant rainfall, increases the risk of landslides if climate change is present [10]. Mountainous locations are prone to climate change; this state worsens as a result of numerous inadequacies in dealing with climate dynamics, ultimately affecting the agricultural sector, specifically forestry and agriculture. The Center for Research and Development on Climate Change and Policy [11] confirmed the causative elements and their interrelationships in mountain ecosystem landslides. Fig. 2 depicts a map of the research site.

Fig 2. MTs PAKIS Location

The primary reasons that contribute to vulnerability in mountain ecosystems such as Gununglurah Village are (1) infrastructure, the lack of landslide control structures, and the population's residential layout, which is predominantly concentrated in unproductive cliff areas. Aside from that, (2) ecological variables have changed in forest land cover, with the majority of it being less than 30%, and the cliffs' unstable condition. The third element is the socioeconomic side, in which mountain populations' livelihoods are still centered on land and exceptionally high quantities of natural resources. This research was carried out in the Talang Mountains, Solok Regency, West Sumatra [11]. Maulana and Sugianto [22], who undertook a study in the Rinjani mountain habitat on Lombok Island, came with almost much the same finding.

Gununglurah Village, where Madrasah Tsanawiyah PAKIS (MTs PAKIS) is located, has a population of 9,102 [21]. Of the total population, 2,514 people have not or are not working, 2,336 people take care of the household, and 1,153 others work in the agricultural sector. One thousand fifty-five people have student and student status, 628 work as employees, and the remaining 544 work as entrepreneurs. The most significant activity of the residents of this village is taking care of the household and as farmers and planters. The Gununglurah Village community can be categorized as an agricultural community based on the number of workers in the dominant agricultural sector. This means that the community's dependence on natural resources in the form of land is very high, while most of the village's land conditions are hilly with steep slopes [21].

Through multiple prior investigations and inventorying local wisdom related to landslide prevention in the community, Soewarno et al. [12] classified the Gununglurah community as featuring the threat of landslides. The following is a representation of land usage collected from the Geographic Information System and displayed using BIG data. Gununglurah Village has a residential area of (5.02%); agricultural land with an irrigation system (0.76%); rain-fed agricultural land (5.2%); dry land farming (0.14%); plantations (12.66%); grass and bushland (9.4%); and protected forest (66.8%). Gununglurah inhabitants rely on the environment and accessible land resources because their livelihood is dependent on agriculture and plantations [10].

Gununglurah Village, which is surrounded by mountains and hills, is vulnerable to agricultural failure if it fails to detect and address climatic dynamics [10]. This condition might deteriorate if vegetation cover in hilly places is inadequate. Furthermore, we identify a correlation between the elevation of hilly regions and the degree of vulnerability to climate change occurrences. The steeper the hill, the more sensitive the community is to climate change.

The people who live surrounding MTs PAKIS are from the northernmost community groups of Sambirata Village and Gununglurah Village. This area directly borders protected forests and state-owned company (Perhutani) production forests. This region has the highest elevation of the two villages from which MTs PAKIS students are enrolled. This neighborhood group had the greatest school dropout

rate since they were the furthest away from the numerous educational resources provided.

The majority of students from the surrounding elementary schools in Sambirata and Gununglurah dropped out after graduation. After dropping out of college, children support the family financially by moving or assisting with work on farmland and other income-generating activities. This problem was described by a parent whose two children are still enrolled at PAKIS in the current *Package C program* (high school). If girls drop out of school, they frequently marry instantaneously; the average marriage age is 16 years or fewer. If boys drop out of school, they either support their parents with agricultural and plantation work or go abroad to work, including in Jakarta, Indonesia's capital.

In one month, the income of a family in the community group near MTs PAKIS whose children quit out ranges from IDR 1,500,000 (+ USD 100) to IDR 2,000,000 (+ USD 130). This money is generated through a variety of jobs, including (1) growing a variety of intercropping crops on forestry land through the renting scheme. These plants are typically cardamom, coffee, and other types of plants that vary by farming family; (2) being casual workers or farm laborers with profit sharing or weekly wages; and (3) taking (mining) sand from rivers shortly after the flood recedes and selling it to village road construction projects or residents who need it to build houses.

Gununglurah and Sambirata Village residents have a wide range of incomes for their families. However, in general, all sources of income for the family are still heavily reliant on natural resources. Aside from the remote access, this economic situation means that residents living in these two settlements at high elevations have a high school dropout rate. Transporting children to and from the nearest junior high school costs IDR 20,000 (+ USD 1.3) per person. One family's income is insufficient when compared to monthly income, with the expenses of one child attending junior high school.

3.2 Environmental Education and Climate Change

MTs PAKIS works with the community to find answers to the challenges of families that have difficulty attending schools because they're far away and expensive, as well as environmental issues in the area. The founding members of MTs PAKIS are ecological activists, educational activists, bird observers, and green activists. They discovered that many children had dropped out of school in the Sambirata and Gununglurah Village regions, which are next to state forests. Aside from the fact that this location has limited access to secondary school facilities, there is also the situation that out-of-school teens have an economic role in their families. Agriculture and plantation livelihood options necessitate labor; at this family income level, hiring labor from outside the family is impossible. Such economic tactics are still common among forest and rural farming communities in Indonesia.

Based on the conditions above, the developed education for schoolchildren also tries to meet the demands of the kids' families, so that they are not cut off from their daily environmental limits and socioeconomic systems. Agriculture, plantations, and natural resource processing are interwoven into the planned education system. Aside from that, conservation values are strengthening to maintain the sustainability and continuity of natural resource-carrying capacity. This is built into the cognitive parts of everyday learning. The mental elements, in conjunction with the primary and secondary school system established by MTs PAKIS, connect socio-ecological factors with their identities as farmers and planters.

A spatial material delivery strategy and action-based learning are used in daily learning and teaching activities. Combining classroom and out-of-class models with observations, debating findings, and taking action is a common practice. Environmental exploration activities, bird observation, documentation, and bird identification are examples of this element of knowledge and action. Identifying and protecting bird habitats, as well as planting various plants and trees, are examples of such learning activities. This action benefits the density of hilly vegetation cover at high altitudes as well as the habitat for birds and other animals. Plants and trees planted have economic worth as well, such as coffee plants. A local coffee product was developed and began to be pioneered from this coffee plant, which may give additional income.

The learning, action, and labor activities that are typical of MTs PAKIS drew the attention of many volunteers, who came to provide their responsibilities based on their strengths. This activity is also overseen by MTs PAKIS managers, who assist volunteers in participating in the learning process. These volunteers come from a variety of experiences and provide a diverse new insight to students. These individuals are also known as study or educator volunteers. They are students' study companions. These volunteers, like teachers, assist students in comprehending learning content. In their daily lives, these volunteer educators strive to embody the spirit of MTs PAKIS, which seeks to carry out a teaching and learning process based on local knowledge and experience.

MTs PAKIS, in particular for climate change material, introduces kids to the concept of climate change and then its application to where they live. Students from forests and communities are asked to

participate in conversations to learn how climate change is influencing their villages and environment to change gradually. Climate change information is frequently taught in elementary education through outdoor discussion activities, forest exploration sessions, and activities related to agriculture and waste or household waste processing. MTs PAKIS students usually aim to introduce the activities, region, and richness of the environment in which they live through various creative activities such as writing, art, and social media. This is a significant step forward for an independently managed essential education institution.

This creative effort takes the shape of short stories and posters, as well as images and narratives collected while studying and exploring the environment in which they reside. Currently, four actions have been carried out in the activity scheme supported by MECCE (Monitoring and Evaluating Climate Communication and Education) from Canada are: Organizing a poster contest about climate change, which resulted in 19 posters; Producing short videos about schools and the environments in which children play and learn are being produced to make it easier to communicate climate change; Producing the novel book "Perahu Negeri: Notes from a Forest Edge School" from diverse documentation on the learning process as a medium for transmitting ideas about the environment and climate change under the collaboration of MTs PAKIS, Center for Community and Cultural Research – National Research and Innovation Agency (BRIN), Faculty Agriculture – Brawijaya University, Faculty of Social and Political Sciences – Jenderal Soedirman University and children's book publishing partner “Rayya Creativita”; and; Conceptualizing a climate change curriculum and syllabus for other schools called Climate-Care School for Tsanawiyah/Secondary Education Students”.

Apart from being directed toward the ongoing learning process, different actions put out by MTs PAKIS are currently campaigning to a broad public about climate change. This program tries to raise public knowledge and literacy about climate change. Formal education at the primary and secondary levels, which includes climate change as knowledge in teaching materials, is still required. The students and management of MTs PAKIS publicize the many actions they take out and serve as a link to achieve climate change literacy, which is not covered in primary and secondary school. This is consistent with literacy education, which is viewed by MTs PAKIS institutional administrators to be the essence of literacy.

Climate change education is part of the environmental education provided by MTs PAKIS. The activities that educate climate change mitigation and adaptation demonstrate this. Conservation education is also practiced in and around schools and in the forest. MTs PAKIS, which was formed in 2011, has seen advancements in its learning methodologies during its existence. However, this advancement is only to adapt to the evolving curriculum and tweak the supporting programs now in place. This advancement must be linked to enhancing educators' competence in environmental understanding, one of which is climate change.

Building model greenhouses, planting food crops, and increasing beneficial plant species near schools are examples of climate change adaptation actions. Furthermore, it is critical to provide climate change mitigation education, such as biodiversity monitoring, forest plant inventorying, and a variety of other activities. Teachers who educate continue to provide spiritual teaching as part of the Madrasah school curriculum, as well as articulating a spiritual understanding of climate change awareness.

MTs PAKIS presented students with the nature phenomenon in the climate change material. The students are then taught about its use in their daily lives. Students who live near forests are urged to participate in conversations about climate change, which will progressively alter their villages and surroundings. Students are offered both indoor and outdoor climate change teaching materials in primary school. The students are then encouraged to walk around and explore the forest, and they are taught sustainable agriculture activities. Environmentally friendly agriculture using an agroforestry method is also taught. Aside from that, students are educated about disposal and domestic waste.

3.3 Climate Change Education for Social Transformation

What is happening at MTs PAKIS until 2023 demonstrates the contribution of educational endeavors to societal transformations. The impact of the environment and climate education and learning process not only affects aspects of students' cognition but also creates a new value on existing societal problems, such as child labor, high levels of migration to metropolitan regions, and child marriage. Education practices, both directly and indirectly, alter fundamental beliefs about employment, relationships, geographical barriers, production relations, and culture. These factors are important keywords to consider while doing a social change study. There are numerous sociological definitions and viewpoints on social transformation. Still, it can be defined as any change or evolution of a social organization, its structure, or function significantly in a unit of society in its various manifestations [13,14]. Social change can occur on a micro or global scale, in values, culture, material, and non-material aspects, or within a

community or as a result of external factors.

As a more fundamental change in a unit of society, the phrase social changes evolved and gave rise to a new concept, namely social transformation. Castles [15] and Portes [16] distinguish between social change and social transformation based on the depth and breadth of the change. They define social transformation as a fundamental shift that occurs in an organized manner and in which resources are dispersed more radically than a gradual, slow process that does not impact the social structure in depth or the continuity of all societal functions. The current community is fundamentally and dramatically different from its predecessor due to social transformation. Individuals and collectives/organizations are the subjects of social change, which are visible and change on a daily basis, whereas social transformation places indicators of change at the middle level: norms, perspectives, skills, cultural capital, and class power structures [17].

Biological causes, geographical factors, technical factors, and sociocultural factors can all cause social change and transition. Nonetheless, economic connection elements are usually the ones that determine whether or not a shift occurs. According to Polanyi, modern society is in a predicament that cannot be divorced from the market [18]. Because everything is commodified, including labor, land, and money, the economy is distinct from social dynamics. The economy strives for market exchange rates while failing to suit the requirements of society. Finally, persons who lack the means of production are unable to take advantage of chances for personal and family growth. Only their physical strength, especially effort, remains. To live on subsistence, low-income households with no means of production and no land rely on their labor, especially that of their children. Women and girls are typically subjected to the greatest amount of pressure [18]. Forest edge settlements of Pesawahan Hamlet face this predicament, which is also at the foundation of Pesawahan Hamlet's socioeconomic problems, such as migration, child labor, and child marriage.

In the context of rural transformation, the Center on Integrated Rural Development for Asia and the Pacific (CIRDAP) identifies education as one of the factors that must be improved to bring about significant changes in rural areas, such as a pro-poor and non-discriminatory policy framework to promote equal opportunities for all groups in rural areas, access to land and productive assets, access to financial resources, and improving the human quality of poor people. Education, in particular, should be able to become a vehicle for change in rural regions by responding to the origins of the problems encountered and the dynamics of rural-urban relations, which requires flexibility in educational programs that are rarely found inconventional formal education systems [20].

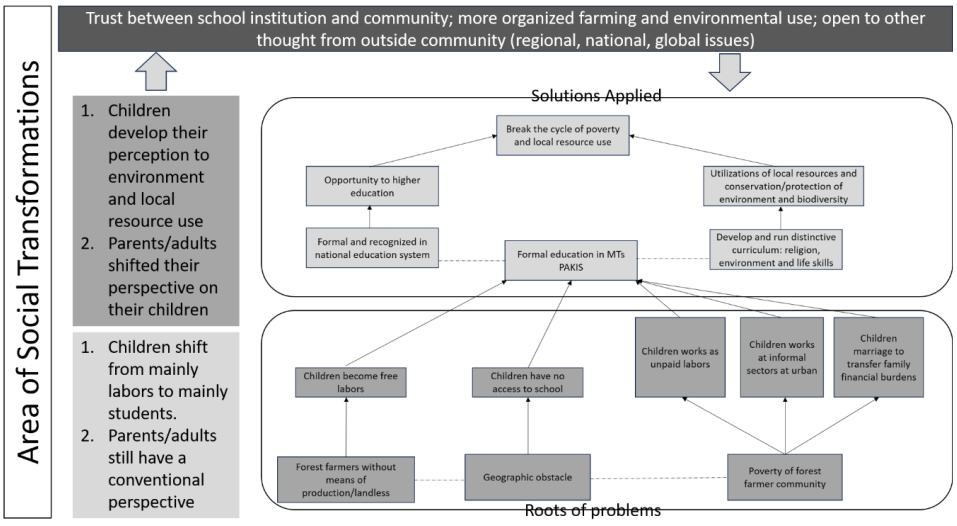

Fig.3 Summary of the flow of transformation due to the existence of MTs PAKIS

Fig. 3 depicts the relationship between the social problem, environmental education, and the initiative aimed at social transformation. By design, the school employs environmental education as a means of isolating school-aged children from actual societal problems and exposing the outcome to improve the larger society's perspective on children and local resources. The presence of MTs PAKIS arose from

societal issues in the area, specifically poverty and isolation. This meant that children did not have access to education and were forced to work as unpaid laborers in small-scale farming with limited tenure security. Children are typically absorbed by three sectors: exceptional home agricultural work, migration in the urban informal economy, and child marriage. MTs PAKIS attempts to respond to this by giving another option: an education sector that is affordable and accessible to the community while remaining within the structure of formal education to ensure that graduates can continue their education.

As a result, the central strategy advocated by MTs PAKIS is to remain a part of formal education, to develop its curriculum in response to the needs of forest farming communities and to teach children local resource management skills, and to encourage the emergence of sustainable and economically viable patterns of forest resource use. When the foundation of society's cultural values shifts, MTs PAKIS School becomes a nexus for transformation. The first shift is in children's perception, from workers to educated humans. Second, to develop youngsters who understand and grasp survival techniques based on local resources. Third, promote sound and efficient forest resource management techniques. The application of this education system leads to shifts in community perception (parents) and the emergence of educational chances to break the vicious circle of poverty and build trust to create collective energy in the future in the forest farming community in the Gununglurah Village area. This situation indicates that there has been a collective social change, albeit it has not yet affected the power structure in society. However, if managed in the framework of policy democracy at the village level, this achievement adds greatly to the process of joint strengthening toward transformation.

Climate change education initiatives empower individuals and communities to take genuine action to mitigate the effects of climate change. This action-learning component supports active participation and long-term contributions to climate change mitigation (emission reduction) and adaptation initiatives. Essentially (the majority) of children/students at MTs PAKIS are free of societal burdens and poverty, allowing them to focus on developing their own and their environment's potential, while in society, perceptions and actions about resources are evolving. However, not all students and families have this option; after completing their education at MTs PAKIS, some return to the informal sector. There is a widespread belief that secondary education at MTs PAKIS is sufficient for youngsters to work.

4. Conclusions and Recommendations

The research and program outcomes reveal that school-age children can continue their studies without spending money on schooling or transportation because they are still in the same surroundings. In addition to conventional schooling, children get knowledge relevant to their community's needs as a forest edge community. Agriculture, agroforestry, animal husbandry, biodiversity, and climate change are among the topics they study. They have kept these youngsters in the village rather than migrating to the city by completing their education, allowing them to study and work in the town, and preventing them from marrying at an early age. The knowledge and education at MTs PAKIS can provide answers and prepare youngsters with better skills, knowledge, and self-confidence to meet their families' economic needs in the future. Their grasp of climate change is based on field experience and theoretical knowledge, and they can now explain why seasonal fluctuations are harmful to family-production crops like cardamom.

MTs PAKIS's commitment to social change is achieved by its attempts to address relevant societal challenges, including child labor, migration, and child marriage, through education and learning activities. The statement emphasizes the importance of economic contacts in driving social transformation and the institution's goal of providing affordable and conveniently accessible education to children living in rural areas. This statement emphasizes the importance of climate change education activities in inspiring individuals and communities to take proactive steps. Nonetheless, it recognizes the barriers that certain students and families face in their pursuit of education, hampering efforts for societal transformation. Education is critical in supporting social transformation and fostering the development of a society marked by equity and sustainability.

Education about climate change has become necessary for society to have more awareness and know what efforts individuals and communities can take to overcome climate change. This system must expand its reach not only to forest edge communities. However, MTs PAKIS has a number of challenges, including the continuation of the learning process from students who have dropped out of school and have not replied to MTs PAKIS administrators' offer to return to learning activities. The majority of these challenges arise because students have worked outside of the area or are required to work full-time. Economic orientation consumes all or most of the time of a school-age child. The administrators of MTs PAKIS are still looking for and discussing the local community's livelihood conditions and financial survival plans.

Acknowledgments
The author would like to acknowledge all individuals and organizations who assisted in the completion of the complete study in the appropriate field. In addition, the author is grateful to MECCE Canada for providing funding to assist the study. The subject of this paper is the practical consequence of the aforementioned research activities.

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