The Production of Safety School Space from Climate Disasters in Doi Mae Salong Forest, Upland Northern Thailand

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ABSTRACT

This research is conducted in Santikhiri, a hilltop village on the highest peak in the Doi Mae Salong forest, where climate change increases the intensity and frequency of natural disasters that immensely affect the local children in the mountainous area in Chiang Rai province, northern Thailand. There is only one secondary-level school in this forest landscape educating around 900 schoolchildren from various minority hill-tribe ethnic groups. This paper examines everyday life experiences recentering the village school's role as the producer of safe space for the forest children from climate disasters. School safety is a global framework for recognizing the importance of child-centered efforts in building disaster resilience for the education sector. Parameters and variables used to measure the disaster resilience of schools are adapted from the Climate Resilience Model and School Safety Model by Tong et al. (2012), covering three dimensions: 1) institutional issues, 2) physical conditions, and 3) external relationships. Lefebvre's Spatial Triad Framework is applied to dialectically interconnect dimensions to produce a safe space at the village school to protect the students from climate disaster threats. A mix-method method is applied with several techniques to collect data, including participant observation, semi-structured interviews, and content analysis. Furthermore, a scale Likert survey examined statements on school safety from educational practitioners in the rural forest area. The research argues that the production of safe space at the school is intertwined with budget allocation for disaster preparedness and response (institutional issue as *l'espace concu*), environmental protection campaign to create a hygienic school environment (physical conditions as *l'espace percu*), and support from the local community (external relations as *l'espace vecu*). However, the school is also two contradicting spaces of conceived and lived. Through the critical examination of the production of safe space, the school is a planned space of hierarchical power relations in institutional issues focusing on impacts from rapid-onset disasters. Concurrently, the forest children are still marginalized from external relationships and natural conditions' slow-onset climate change impacts.

1. INTRODUCTION

In Northern Thailand, Doi Mae Salong is an upland forest environment in the Mae Fa Luang district in Chiang Rai Province. With 35,000 residents, Doi Mae Salong is home to numerous ethnic minority groups, including Akha, Lisu, Lahu, and the Chinese settlers, the descendants of exiled Chinese Kuomintang soldiers after being defeated by communist troops at the end of the Chinese Civil War (Duangjai at al., 2015). Ethnic populations in the Doi Mae Salong forest have impinged heavily on forest areas for land certification and agricultural growth (Delang, 2003). The expansion of monoculture

crops for market variability during the 1960s, such as maize, replaced the previous land practices, including extensive shifting cultivation replaced by opium production. The influx of migrants resulted in increasing deforestation and degradation of land, regularly covered by pesticides and fossil-fuel-based fertilizers to maintain yields (Berkes et al., 2000). Ethnic minorities migrating from neighboring countries intensified the shifting cultivation cycle in response to population pressures leading to reduced land availability and increased land degradation. Because of border security concerns about reducing opium production and illegal immigration (Ganjanapan, 1998), the area has been under Royal Thai Armed Forces (RTAF), created the forest space as a reserved zone under the National Forest Reserve Act in 1964. The state reinforced a land use zoning system in the forest reserve in the 1960s to convert the fallow land to cash crop plantations for commercial purposes (Duangjai et al., 2015). RTAF managed the agricultural practices and undertook interventions to restore the forest landscape and improve the forest community inhabiting the land (Virapongse, 2017). Following the Act, the 1st National Economic and Development Plan (NEDP) was implemented to stop opium production, protect forests and watersheds with catchment-wide land use that impacted erosion, water cycle imbalances, and landslides at the community, and encourage development in society and economy for the ethnic hill-tribe minorities (Leake, 2007; Pinthong, 1992). In parallel to the anthropogenic alteration of the reserved area, the ecological change in the forest is exacerbated by climate change that increases threats leading to longer and more extreme weather events.

Climate change affects many natural and human systems, posing considerable dangers to human health, ecosystems, infrastructure, agriculture, forestry, and fisheries production. Studies have shown that climate change can produce enormous difficulty for governments and communities in controlling existing levels of disaster risk (Wahlström, 2015) when combined with a lack of disaster knowledge (Pollock & Wartman, 2020). For example, in the event of a landslide, the physical susceptibility of infrastructure and the human body contributes to the emergence of sensitivity, as does the need to mitigate and escape. Therefore, vulnerable people need specific attention and protection, like children, people with disabilities (special needs), people suffering from major illnesses, exile, refugees, and immigrants (NDPMC, 2015; Pollock & Wartman, 2020). Children are consistently vulnerable due to social, political, environmental, and economic variables that put them in peril. Children may be killed or harmed due to disasters for various reasons. According to Peek et al. (2017), children may be vulnerable to disaster based on three criteria, psychological and behavioral reaction, 2) physical response, and 3) sociodemographic traits. Traumatic reactions to disasters and accompanying symptoms such as extreme dread, disorganized and agitated behavior, emotional numbness, and anxiety may manifest in their lives in the long-term aftermath of a disaster. Therefore, this study is concerned with producing a safe space for the children inhabiting the forest landscape in the Doi Mae Salong area. As children spend more time in schools, school safety becomes more important to reduce disaster risks, which would protect them from coping better in the case of a disaster. Accordingly, it is imperative to identify hazards on school premises that affect children and develop a crisis management strategy that includes safety space for the children.

1.1 Conceptualizing Lefebvre's production of space

Central to this paper is the conception of school that is too often deployed in its intrinsic physicality as an immovable and passive space. Henri Lefebvre (1901-91), a French Marxist philosopher, stated that space is a social product (1991) understood through knowledge, experience, and practice in everyday life. One of the relevant contributions

of Lefebvre's work is the conception that "school" as a "space" is "produced" not by a single actor but rather through a complex set of overlapping societal agencies (Till, 2009). A major point of this research is to concretize Lefebvre's Production of Space theory that school goes beyond the space of the physical object, studying the transformation of the spatial scale on which a multi-layered socio-spatial matrix configures safety space for children. Henri Lefebvre gained notoriety in the 1930s with the first translation of Marx's 1844 Manuscripts. The 1974 study La production de l'espace, recently reissued in France (Gottdiener, 1993) and translated into English by Donald Nicholson-Smith in 1991, is one of his most influential books. Instead of just describing the politics and history of space, Lefebvre's work can give a useful set of conceptual tools for mapping the spatiality of politics and history. In 2008, Christian Schmid contextualized Lefebvre's three dialectically interconnected dimensions (see Figure 1) or processes to the production of space as the core of theoretical and practical aspects of space and spatializations in social sciences, named: The Spatial Triad Framework (Spatial Practice/ the perceived (*perçu*), Representation of Space/ the conceived (*conçu*), and Representational Space/ the lived (*vécu*).
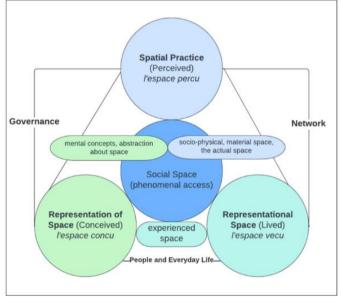

Figure 1. Henri Lefebvre's The Spatial Triad Framework (adjusted from Schmid, 2008)

Spatial Practice is the perceived space formed by daily routine (*l'espace percu*) (Goonewardena et al., 2008). It is the First Space of socio-physical, material space, the actual/concrete space seen, generated, and used. The Representation of Space is the conceived space that is dominant in the production of space and is central to the production of abstract space (*l'espace concu*). It is the Second Space of mental concepts, ideas, idealism, and abstractions about space in spatial arts, knowledge, and science. Finally, the Representational Space is the lived space where the place gets meaning through experienced value (*l'espace vecu*). It is the Third Space of social relations with embodied complex symbolism by the inhabitants. According to Schmid (2008), "The Production of Space" by Lefebvre is consistently cited for his "spatial turn" notion that has carried hold close to the social sciences associated with the collective processes of globalization. Lefebvre's Spatial Triad contributes methodically to thinking about social production in dialectical terms. Its significance is especially because it

systematically integrates urban/rural landscape and space categories in a single, comprehensive social theory, enabling the understanding and analysis of spatial processes at different levels. Using the concept of the production of space, Lefebvre postulates a concept that identifies space as profoundly constrained by social reality. Hence, space is a (social) product because it is produced within social boundaries and does not exist "in itself."

1.2 Contextualizing spatial dialectic, rural forest, and educational institutions

According to Merrifield (2006) and Cervone (2017), rural space is a key aspect of Lefebvre, who spent his early works in rural villages in France to examine the rural peasantry of socialist history. Lefebvre did not attempt to define "what is rural." Instead, he examined the everyday rural life and relationships between people and power that create rural space. "On the Rural: Economy, Sociology, Geography" (2022) is Lefebvre's critical work (English translation) on understanding rural space as the keyspace of development and struggle against marginalization. For Lefebvre, a rural community is characterized by complexity in both horizontal and vertical dimensions. The horizontal complexity originated from different social structures in the same historical age society, and the vertical one is rooted in the coexistence of formations that differ in age, catching up with the present (Elden, 2004). There is a history of ethnic mobility, land use, and other underlying ideology of the state policy in the case of the rural school in the Northern Thai Forest landscape. As Cervone (2017) explains, from a Lefebvrian point of view, no social relations exist in a vacuum and are isolated from one another. Hence, the "safe space" produced at Santikhiri Wittayakhom village school in this article might serve as a conceptual discussion of the relationship between school as part of the community forest in a rural space and school as part of the hierarchical structure of social institutions in Thai society as shown in Figure 2.
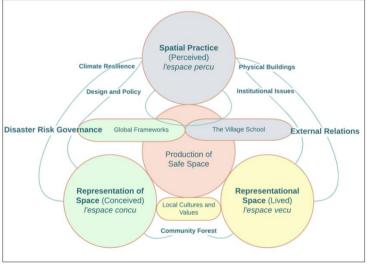

Figure 2. Spatial Triad Framework of Safe Space for School Children in Doi Mae Salong Forest

For this study, the village school in Doi Mae Salong forest belongs to the differentiation of inhabiting and habitat space, which is not idyllic. Lefebvre further introduced the notion of rhythmanalysis, a tool to understand everyday life through the rhythm by which social elements interact in particular repetition, a pattern, through time in a particular space in complex social relationships. Christie (2013) argues that

the most important question to Lefebvrian rhythmanalysis is to examine the rhythms of multidimensional social relations innate in the production of space. Rhythmanalysis can make the connection between individual and social rhythms obvious. The world, according to Lefebvre, is made up of many different rhythms. He writes, based on his studies of rural village life: "The home, the field, the tree, the sky, the mountain, and the sea are not just what they appear to be. They are engulfed by cosmic and living rhythms..." (Lefebvre, 2014). Rural life has a cyclical rhythm, but capitalism's 'quantified' linear time is 'homogeneous' and 'fragmented, "monotonous, tiresome, and even unpleasant.' According to Lefebvre, linear and cyclical rhythms are at the center of rhythmanalysis and are in tension and contradiction with one another. By applying educational rhythmanalysis, the rural school is understood in its connection with educational policy, socio-political agenda, and community engagement. A school has its rhythms of Practice to be noticed and observed for producing a safe space for the forest children from climate disasters.

1.3 School safety and disaster education for resilience in Thai community forest

Disasters have many negative consequences on pupils and their education. Globally, the increasing risk of disasters and their consequences have substantial implications for the well-being of school-aged children and adolescents. When local hazards emerge, school structures that have not been planned, built or maintained to resist them face an increased risk of damage and collapse. Consequently, many high-profile school catastrophes have claimed tens of thousands of lives. Children are considered one of the most vulnerable groups after a catastrophe and are often portrayed as docile (UNISDR, 2011). Schoolchildren are susceptible to catastrophe situations (Ocal & Topkaya, 2011) due to their increased physical and emotional sensitivity. According to Peek et al. (2017), children have potentially three criteria of vulnerability to disaster such as 1) psychological and behavioral reaction, 2) physical response, and 3) sociodemographic characteristics. Children are measured for traumatic reactions to disasters and associated symptoms such as intense fear, disorganized and agitated behavior, emotional numbness, and anxiety. Ensuring students' safety and well-being makes schools more resistant to natural risks. Schools are considered a field of children's growth to be the quality of reliable human resources in the future and vital in the household and local community's readiness for a possibly hazardous situation (Cvetković et al., 2018). A school must be treated as a unique entity with unique emergency management responsibilities (Lindell & Hwang, 2008). Schools may play a crucial role in ensuring student safety by integrating communities and sociopolitical institutions to strengthen their capacity to cope with natural disasters (ADPC, 2010). It is vital to equip them with emergency response capabilities and develop students competence. If schools do not adequately address the problem, the instructional process will be disrupted, and children will face the brunt of the consequences (Khan et al., 2020).

The Hyogo Framework for Action (HFA) is the first international DRR strategy (2005-2015) to give a clear work plan for different regions and stakeholders. The HFA's Priority Area 3 (*"Use knowledge, innovation, and education to promote a culture of safety and resilience at all levels"*) emphasizes knowledge and education as its five key aims. It focuses on schoolchildren and youth to raise community awareness of threats and improve preparedness. School safety encompasses both within and outside-the-school safety concerns in its current form. It covers child protection and safety issues and any forms of abuse and deprivation that impact children's physical and mental health. As it exists now, School Safety is defined as *"creating safe environments for children from their homes to their schools and back."* Furthermore, according to Ahmedabad Action

Agenda for School Safety (2017), establishing safe environments for students from their homes to their schools and back has been termed "school safety." This includes protection from large-scale geological/climatic disasters, human-made risks, pandemics, and violence, increasingly frequent and smaller-scale fires, transportation and other associated catastrophes, and environmental concerns that can harm children's lives.

The capacity of a society to adapt to and recover from the effects of a natural disaster is contingent on how much each individual learned from prior experiences and knowledge passed down from our forefathers, as well as how much they prepared for a disaster in daily life through partnerships among households, schools, and the community (Sakurai et al., 2017). Hence, disaster education is the bedrock of all disaster risk reduction initiatives. Safety, security, and prevention in educational institutions have long piqued the educational community's attention and concern. Educational institutions must provide a safe and secure environment for students, instructors, and non-teaching personnel to foster an effective learning and working environment. Progressively improving school safety necessitates establishing physical, social, and emotional safety (Devine & Cohen, 2007). The ultimate goal is to guarantee that children study in a safe and supportive environment that prevents accidents and incidents and fosters good attitudes and perceptions about safety.

2. MATERIALS AND METHODS

This research used a mixed method combining a qualitative and quantitative approach in analyzing the data. From the Spatial Triad Framework, using the village school as the case study in perceived space, the activities and experience at the school are considered rhythm to be investigated, entwined with the conceived and lived space. Lefebvre (2004) describes rhythmanalysis as a qualitative analysis method to examine an abstract and complicated phenomenon through the dual acts of "understanding" and "noticing." This study develops rhythmanalysis, a methodological tool Lefebvre introduces to analyze educational institutions as having a "cyclic pulse of the lived" (Middleton, 2014) within spatial production. In formulating the practical research method, Christie (2013) translates rhythmanalysis as a multidimensional understanding of different rhythms, focusing more on connecting elements in the social space. Collecting the qualitative data requires participant observation and a survey in a semi-structured interview to sample the target in this research, consisting of the representative of the school's executives (director, deputy director), and to comprehend their understanding and perspective on disaster and climate change, which influences their decision-making and actions for the school-based management on disaster and climate change. Moreover, the content analysis aims to reveal patterns embedded with deductive approaches from primary data sources collected from academic journal papers, books, official reports produced by international institutions, provincial development guidelines, and school development plans, including a semi-structured interview following concepts in Lefebvre's Spatial Triad Framework. While in terms of quantitative data, this study utilized the survey questionnaire to the school's personnel adopted from the Climate Resilience Model and School Safety Model by Tong et al. (2012) to reflect the three pillars of the school safety framework: Institutional, Physical, and External Relationships Dimensions by using a scale Likert survey, e.g., 1 = Strongly Disagree, 2 = Disagree, 3= Neutral, 4 = Agree, and 5 = Strongly Agree (Joshi et al., 2015). This method aims to "understand" and "notice" the grounded response to particular questions and statements on school safety building for climate disasters from the educational practitioners in the rural forest area.

Table 1. The Questionnaire

	Institutional Issues
1	The school incorporates disaster components into school planning, school regulation, and school syllabus
2	The school has a preparedness and emergency management plan
3	The school has a recovery management plan
4	School has established disaster groups and disaster activity
5	The school allocates a budget for disaster preparedness and response
6	The school allocates the budget for disaster training activities
7	The school allocates the budget for renovation/repair/rebuilding after a disaster
8	The school allocates a budget for monitoring
9	The school allocates a budget for supporting students with disability (special needs)
	Physical Conditions
1	School regularly checks on school buildings, facilities, equipment, and dangerous materials
2	School has sufficient safety building codes
3	The school has a sufficient emergency exit door
4	School has sufficient evacuation shelter
5	The school has damaged infrastructure, facilities, and equipment by the disaster
6	School has sufficient emergency supplies (emergency bags, storage food, water)
7	School has renovated and repaired damaged facilities and equipment regularly
8	The school has established environmental protection campaign to create the hygienic school environment
9	The school has regularly checked on food expiration to create the hygienic and safe school environment
10	The school has regularly collected garbage to preserve the hygienic school environment and minimize the risk of disaster
	External Relationships
1	The school has collaborated with the local government
2	The school has support from the local community
3	School has regular meetings with the local Department of Education
4	School has regular meetings with the local people's committee
5	The school has established a communication system
6	The local government supports early warning in school
7	The school is located in a local community area
8	The school is used as an evacuation shelter for the local community
9	School has participated in disaster activities with the local community
10	The school has been involved in the disaster management plan for the local community

2.1 Location

The location selected for this study is Santikhiri village in Doi Mae Salong sub-district, Mae Fah Luang district, Chiang Rai province, Thailand. Doi Mae Salong is an upland region in Chiang Rai Province, Thailand, consisting of 33 villages in the Mae Salong Nok subdistrict of the Mae Fa Luang district. It is situated in the northernmost area of Thailand, surrounded by rugged terrain and the watershed of the Mae Chan River of the Mekong tributary. Doi Mae Salong has an area of 335 square kilometers, with the majority of land used for agriculture, monoculture tea plantations, maize, upland rice, and modest portions of immature rubber tree plantations disturbed primary forest and some spontaneous secondary regeneration. Agriculture (corn, rice, coffee, bean, tea, orchard) constitutes 31% of the research area, while the forest covers around 69%. In recent years, traditional crops, such as upland rice, which produce a lesser income, have been changed to commercial crops, such as tea and coffee plantations, although mostly by the area's larger growers rather than by the area's smaller ethnic groups households (Shrestha et al., 2017). The upland forest has an average temperature of

12° to 35° Celsius and has two seasons annually; the wet season occurs from May to October (with an annual rainfall of 1556 mm), and the dry season is from November to April.

Remnants of the Chinese National Army (Kuomintang soldiers) have heavily influenced Doi Mae Salong's school history. The National Council of China (Kuomintang) joined as the founder in 1971 to teach Mandarin Chinese to ex-military Chinese immigrants for the family of the descendants of the former Kuomintang soldiers who live on Doi Mae Salong. Later, the Cabinet resolved to allow the abovementioned groups to live in Thailand under the administrative center of the Royal Thai Armed Forces Headquarters. Later, Santikhiri School was established according to the Ministry of Education regulations. Lieutenant General Krirksilp Kalayanakul, Director of the Department of Social and Occupational Development for Immigrants, is the owner and manager of the school and Mr. Pramote Poree was the school's first principal.

Figure 3. Santikhiri Wittayakhom School in Doi Mae Salong Forest, Chiang Rai province

In Santikhiri village, there is only one secondary-level school to educate the forest children. Santikhiri Wittayakhom School (previously known as Santikhiri School, a Mandarin language school), No. 111, Village No. 1, Mae Salong Nok Sub-district, Mae Fah Luang District Chiang Rai, is located in the area of the Provincial Administrative Organization Mae Salong Nok Subdistrict. The school was built as a public educational institution for elementary schools in 1976 based on the Ministry of Education for the Kingdom of Thailand's curriculum. In 1981, the first grade of Mathayom (secondary school level) was opened with 18 educational personnel and 375 forest students. Currently, the school has 56 populations of teachers and other educational personnel to educate 895 students (as per the 2022 data population). The Santikhiri Wittayakhom School is located on the top of the mountain at Ban Santi Khiri School at the foot of the surrounding mountains until the Department of Education approved a budget to build a special school building for 11,150,000 baht in the mountain area before entering Santikhiri village. When it was completed, the school was officially relocated from its original location, where the school building was at the uphill level, to its current location on January 5, 1993, in a lower mountainous area extending from 900 to 1300 meters above sea level. The current location is chosen considering the attempts to reduce the impacts of disasters, for example, landslides. The location of Santkhiri

Wittayakhom school is shown on the map in Figure 3 below.

2.2 Sampling

This study utilized the purposive sampling technique to collect the data survey. The sampling technique was derived from Yamane Formula for Sample Calculation (1976) to obtain the number of key informants for as many as 25 participants in Santikhiri Witthayakhom school, with the formula given in Figure 4: There was a total of 25 educational personnel (from 56 people) participated in this study, consisting of the representative of the school's executives (director, deputy director), teachers, and administrators.

$$n = N / (1 + Ne^2)$$

Figure 4. Yamane Formula for Sample Calculation (1976)

The Calculation Formula (Figure 4) is explained where (n= corrected sample size), (N = population size), and (e = Margin of error (MoE)), (e = 0.05 based on the research condition).

This study calculated the total population sampling from 56 people as school personnel. After the calculation, 25 people were determined as the optimum sample size to appropriately represent the school personnel population. With the N=56, the Margin of error was 5%, maintaining a confidence level of 95%. The demographic information of sampling is addressed in Table 2 below.

Table 2. Demographic Information of School Members Information

Category	N=25 (100%)
Position	
Executive Board of School	3 (12%)
Teacher	22 (88%)
Gender	
Male	8 (32%)
Female	17 (68%)
Age	
Below 30 years	7 (28%)
Between 30 – 40 years	18 (72%)
Education	
Bachelor Degree	15 (60%)
Master Degree	10 (40%)
Length of Working	
Between 1 – 5 years	15 (60%)
Between 5 – 10 years	8 (32%)
Between 10 – 15 years	2 (8%)

Table 2 shows the study's demographic information, consisting of 3 executive boards and 22 teachers, with 32 percent of male school members and 68 percent of female school members. Among 25 school members, 28 percent are under 30 years old, and 72 percent are between 30 and 40 years old. For educational background, 60 percent finished a bachelor's degree, while 40 percent graduated with a master's degree. Lastly, school members' work length contains 60 percent between 1 and 5 years, 32 percent between 5 and 10 years, and 2 percent between 10 and 15 years, respectively.

3. RESULTS

3.1 The lived spaces of the community forest in Doi Mae Salong

The upland forest of Doi Mae Salong is near the Myanmar border in the golden triangle, conjuring up images of the opium trade, formerly the region's most famous product. The

landscape is exceptionally divided, comprising remnant forests, tea and coffee plantations, flower gardens, upland rice, grasslands, paddy fields, and grasslands (Cadena et al., 2015). Aside from the hill tribes, the area is home to Chinese people who are direct descendants of the Kuomintang army unit from Myanmar displaced during China's civil war. Following World War II, the Thai government began to pay attention to the presence of hill tribes amidst fears of Communism in Southeast Asia and international efforts to eradicate narcotics. Since then, the Thai government has undertaken many development projects to integrate the hill tribes into the national agenda: safeguarding Thai borders, stopping opium growing, and improving the living conditions of ethnic minorities in the upland forests (Sakboon, 2013). The Doi Mae Salong Forest Development Project, which began in Chiang Rai in 1988, was hailed as a success in the country's quest to eradicate opium production, contributing to ecological sustainability and poverty reduction in ethnic minorities' highlands. Another project was committed under the Royal Project called the food bank project from the forest to allow the community to benefit from the woods while acting as guardians of the forest.

Before the 1980s, ethnicity was a determinant in describing agricultural production and forest management practices in upland northern Thailand. The Yao, Akha, Lawa, Yai, and Lahu ethnic groups comprise most of the population. The hill tribes adopt different customs and traditions, manifested in their languages and clothing. In the absence of modern scientific knowledge and external capital, the community forest performs a traditional system enabling their self-sufficiency in resources and foods (Altieri, 2004). According to Van der Meer and Van Winden (2003), the local community has relied on smallholder farming to support their rural livelihood. Smallholders have relied on the traditional model of agroecology in which the forest ecosystem intermingled with agricultural systems as their "natural systems" (Vandermeer & Perfecto, 2008). In the 1980s, the Thai government developed a crop-substitution program under the Thai State-Led Development to encourage the Northern hill tribes to cultivate rice, corn, coffee, and tea in a plantation model. This effort has ensured the hill tribes' food security while safeguarding the natural ecosystem. The hill tribes can produce and collect edible plants for their food, but only in moderation and sustainability (Ministry of Foreign Affairs, 2015).

However, a study by Geist & Lambin (2001) argued that the commercialization of lands and resources had an impact on the way of life for forest communities due to government intervention and international policies of nature conservation, leading to a rapid replacement by more intensive land use systems inside the forest area. Cadena et al. (2015) further identified potentially long-term effects of the forest community farming practices in the catchment-wide land-use transition to deteriorating soil fertility, erosion, an imbalance in water cycles, and more frequent and severe landslides. Likewise, intensification processes are commonly responsible for destroying vast tracts of forest. Due to anthropogenic activities, temperature and rainfall patterns have changed in the Doi Mae Salong forest area, which exaggerates the impacts of unexpected landslides, erosion, and lowland floods on the local community and their livelihoods. The socio-ecological pressures are exacerbated in economic dimensions related to the rural poor's welfare and environmental degradation of the highly dependent smallholders to the agro-ecological system. Thus, climate threats are critical to socio-ecological resilience for the community forest in degraded landscapes susceptible to climate variability.

Children are negatively impacted by climate change, given the profound socio-ecological changes that it may bring about. According to the Santikhiri Wittayakhom school's director in the interview, schoolchildren are more physically vulnerable to

climatic disasters' direct effects than adults, and climate disasters directly impact the health of the children through more frequent and severe weather-related disasters, an increase in heat waves and air pollution, and decreased water quality and quantity. A study by Kim (2004) shows that compared with adults, children breathe more air, drink more water, and eat more food per unit of body weight. The pupils frequently engage in outdoor play, exposing them to new or deteriorating environmental risks in the forest, such as infectious infections, allergies and respiratory illnesses. In addition, according to the school teachers in Santkhiri Wittayakhom, the number of students who finish their studies and show up for exams varies annually due to several circumstances, including stress and family migration. Most of the children studying in Santikhiri Wittayakhom are hill tribe children and descendants of Kuomintang soldiers who live with their families in remote areas in the upland forest where access to infrastructure and public services is often lacking. As reported by the International Centre for Environmental Management (ICEM) in 2003, due to increased environmental protection and limited access to land, forest communities in Doi Mae Salong started migrating to numerous locations, possibly causing their children to miss a full year of school. Likewise, according to a study by Kar et al. (2007), exposure to weather-related disasters increases the burden of depression, anxiety, and cognitive deficits in children. It is also linked to high rates of sleep disturbance and environmental adjustment problems to support their academic performance at school (Pfefferbaum et al., 2017; Piyasil et al., 2007).

During the school establishment, there were two times of landslide events in 2010 and 2017 that destroyed the school building and injured the schoolchildren. The reconstruction process required five million Baht to rebuild the school building and area of schoolchildren's dormitory that were destroyed by the landslides and mud. The school has anticipated the challenges of climate disasters and environmental degradation in the forest area by setting directions in the Ministry of Education Office of the Basic Education Commission Educational Service Area Office for quality education and educational management in the 21st century. Among the forest community, where land availability is decreasing for building homes, and soil is degrading to practice agriculture, the children in Doi Mae Salong are regarded as the next generation, thus, encouraged by the parents to learn non-agricultural skills at school to find employment in urban areas or cities. Therefore, to be relevant to the community's needs, the school's mission includes developing learners to have desirable characteristics and skills in life able to bring knowledge to pursue a career and encourage the arrangement of environment and learning resources that are adaptive to natural hazards. Hence, the school also complies with the guideline of the Disaster Prevention and Mitigation Act 2007 and the Disaster Mitigation Plan in Chiang Rai province to create safety environment at school because children have the right to be both safe and secure inside the school environment and to be assured of educational continuity, even in the face of emergencies and disasters. The local government in the Doi Mae Salong sub-district also supports the DRR efforts by the school by promoting the school evacuation drills training once a year for all schoolchildren and staff.

3.2 Conceived educational space of design and policy toward climate resilience

Children, youth, and educational systems are all affected by disasters. Natural hazard-related disasters are estimated to harm 175 million children annually, according to studies of disaster developments and the expected outcomes of climate change (Save the Children, 2006). The Target 2A of the Millennium Development Goal (MDG) aims to "ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling." (United Nations, 2014). Most international

agreements and initiatives on disaster reduction in the education sector in the context of children's rights, including the Hyogo Framework for Action 2005-2015 (HFA), the UNISDR World Disaster Reduction Campaign "Disaster Risk Reduction Begins at School," the United Nations (UNESCO) Decade of Education for Sustainable Development (2005-2014), and UNICEF Basic Commitments to Children in Emergency Situations, among others, have been built on this foundation. Thailand has established the disaster-produced SNAP and invested in disaster risk reduction in response to the 2004 Indian Ocean tsunami and earthquake (Kitagawa, 2020). Thailand continuously passed a new Disaster Prevention and Mitigation Act in 2007, which replaced the Civic Defense Act of 1979 and the Fire Prevention and Suppression Act of 1999. (Kitagawa, 2020). The educational system has been changed to conform to the new disaster relief laws. Because the Thai education system was reformated by the National Education Act of 1999, which established new organizational structures and decentralized, disaster education is now implemented independently by each school.

Over the preceding 20 years, Thailand has seen a dramatic surge in natural disasters (EMDAT-CRED, 2020). Ninety-seven natural disasters between 2000 and 2020 resulted in 11,300 deaths, 82 million people impacted, and over 48 million USD in damage. The severity of hydrological hazards was also two times higher than in earlier decades, with worse climatological (drought and wildfire) and meteorological (extreme temperature) hazard situations affecting more people (EMDAT-CRED, 2020). Since the turn of the century, the intensity and frequency of natural disasters in Thailand have increased, putting the local community at risk. With the cooperation and participation of all UNISDR system partners, the UNISDR launched a global campaign called "Disaster Risk Reduction Begins at School" in 2006-2007. The latter resulted in a significant mobilization of efforts to promote school safety and disaster risk reduction integration into school curricula and recognize nonformal education activities as a critical contribution to awareness, knowledge, and skills development. The 11th National Economic and Social Development Plan from 2012 to 2016, as well as the Ministry of Education's 11th National Education Development Plan from 2012 to 2016, all focus on creating a society of lifelong learning, fostering individuals with well-versed skills and creative thinking, and preparing for future threats or disruptions (UNICEF, 2016). The following statement is the core indicator 2 for the HFA Priority 3 (Use knowledge, innovation, and education to foster a culture of safety and resilience at all levels): "Disaster-risk reduction and recovery concepts and methods are taught in the school curriculum, education materials, and appropriate training." However, according to the 2009 Global Assessment Report on Disaster Risk Reduction, progress in using knowledge and education to foster a culture of safety and resilience has been modest. Only 7% of the 75 countries surveyed made major development between 2007 and 2009, and more than half only made a little or limited gain. One-quarter of these countries stated that they had made progress but that resources from the national budget had been insufficiently allocated.

Since Thailand participated in the World Conference on Disaster Risk Reduction (WCDRR) in 2014, which was a reflection of the Hyogo Framework for Action (HFA), policy on climate resilience, particularly disaster resilience, has flourished in Thailand (Chatterjee et al., 2015). As a result of this occurrence, Thailand developed the Bangkok Declaration on Disaster Risk Reduction in Asia and the Pacific, following the Sendai Framework for Disaster Risk Reduction (SFDRR). As a result, Thailand amended it is National Disaster Prevention and Mitigation Plan in 2015 to achieve community disaster resilience and the Sustainable Development Goals, deal with unprecedented emergencies, and promote community-based lifelong learning (SDGs) (Wongphyat & Tanaka, 2020). According to the Ministry of Natural Resources and Environmental

Policy and Planning, Thailand established the Climate Change Master Plan with the Thai National Disaster Prevention and Mitigation Plan (2015). The climate change master plan generally addresses adaptation, mitigation, and the creation of an enabling environment, focusing on two types of disasters: flooding and drought. As part of this master plan, developing preparedness and adaption capacity became a key component of dealing with climate change. As a result, education is a critical tool for disaster risk reduction activities to adapt to future disruptions and improve awareness of the hazards and impacts of natural disasters.

Children are among the most susceptible demographic groups in the event of a natural disaster, especially those at school at the time of the disaster; as a result, more must be done to protect our children before calamities strike. Then, two distinct but interconnected objectives must be met to protect children during natural disasters: disaster risk education and school safety (Siripong, 2010). In the Chiang Rai province context, an earthquake is one form of natural calamity that Thai educational policy has gradually prioritized because the province experienced the strongest earthquake reported on May 5, 2014, with a magnitude of 6.3 SR (Tanchaisawat & Hirano, 2018). Due to the unanticipated shock, major surface fissures and numerous collapsed structures, including school buildings, were reported in border provinces (Jintaprasat, 2016). Also, flash floods and landslides are increasing in the mountainous part of Chiang Rai province, destroying community houses and public buildings. Hence, disaster education in Thailand focuses on rapid-onset disasters, not slow-onset ones, which are still taught alongside other courses. Referred to Disaster Prevention and Mitigation Act in 2007, the national curriculum in Thailand has been adjusted to the master plan of disaster management policy in the revised Basic Education Act in 2008. Derived from the 2007 Act, at the school level, students in grade six of elementary school are taught the basic knowledge of hazards through the Science Subject, continued until grade twelve of senior high school to also include self-awareness of disaster risks through Social Science Subject and Safety in Life Subject (MoE, 2008). At the school management level, the initiative of the school safety program was developed in 2009 with 11 key projects, including teacher development, school quality, and school improvement to implement School-based Disaster Management.

3.3 Spatial practice at Santikhiri Wittayakhom school: perceived safety space

Disaster education is employed to mitigate and conserve the ecosystem in Thai rural areas, such as the Santikhiri village in Doi Mae Salong, as youngsters living in the forest scenery (Abdulharis et al., 2022; Triastari, 2021). DRR has been integrated into current social studies, science, and health curricula (ADRC, 2009). Numerous school disaster education activities have been undertaken with ADRC, JICA, UNICEF, and UNESCO. In 2006, the Thai Ministry of Education began a pilot project to generate extra school texts on three types of rapid-onset disasters: floods, landslides, and tsunamis, with support from JICA, ADRC, and other organizations. It has also implemented DRR programs in 30 schools (distributed across three regions) that use these texts. Because kids are expected to spend most of their time at school, safe schools are essential for their safety and well-being. Raising awareness of and enforcing official safety institutions and mechanisms at the state, district, and municipal levels is the first and most critical step in strengthening learning space safety. Safe learning facilities, school disaster management, and risk reduction and resilience, according to UNESCO (2013), are the three pillars of constructing safe school implementations assigned to the government at all state levels.

According to Dechkamfoo et al. (2022), rainfall is the main factor determining landslides in the Doi Mae Salong landscape. When the rain is saturated with the land

cover, the steep slopes on hillsides collapse from the high terrain. Damage to roadside constructions occasionally occurs, as shown in Figure 4. A landslide, for example, covered a path linking tourist attractions and the main road in August 2019. A landslide in August 2021 resulted in a big boulder blocking a road. These events demonstrate how landslides along the road's edges disrupt traffic and cut off community connections. In Doi Mae Salong, the school students were most impacted by the climate disasters due to their geographical location and topography in the mountainous forest landscape with high slopes, more severe heavy rainfall-induced landslides threaten the children before, during, and after their school time.

Adapted from Indicators Adaptation from the Climate Resilience Model and Comprehensive School Safety (Tong et al., 2012), the production of school safety practice is examined in three dimensions: institutional issues, physical conditions, and external relationships, composed of a multiplicity of social elements intertwined in synchronized collaborations. The head of the school informed that the school has been practicing school safety as directed by the local government. In Chiang Rai province, school safety and disaster education have been rooted in the Disaster Prevention and Mitigation Plan in 2015 at the provincial level to acknowledge education as one pivotal element supporting the readiness and recovery phase in disaster management as specified in priority number 14 regarding the revitalization of the economy, education, and culture. The educational institution is encouraged to align with the Department of Disaster Prevention and Mitigation (DDPM) to establish the school as a temporary shelter, create contained or included content on disaster prevention and mitigation in the curriculum, and assert disaster education in the Boy Scouts and Girl Scouts activities. The local government has supported allocating the budget for DRR activities and training for the children during emergencies. However, further investigations are required to understand how safety at the school has been produced in multilayers of aspects and find the gaps between formal regulation and actual practice in implementing school safety. Table 3 below indicates the progress of Santikhiri Wittayakhom school in producing a safe space in the school environment through the institutional issue in the Doi Mae Salong area.

Table 3. Institutional Issues

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
Institutional Issues						
Incorporation of disaster components into school planning, school regulation, and school syllabus	0.0%	4 (16%)	8 (32%)	10 (40%)	3 (12%)	25 (100%)
Preparedness and emergency management plan	0.0%	1 (4%)	7 (28%)	6 (24%)	11 (44%)	25 (100%)
Recovery management plan	0.0%	1 (4%)	8 (32%)	10 (40%)	6 (24%)	25 (100%)
School early warning system	0.0%	2 (8%)	10 (40%)	5 (20%)	8 (32%)	25 (100%)
Disaster Information	0.0%	1 (4%)	7 (28%)	12 (48%)	5 (20%)	25 (100%)
Disaster groups and activities	1 (4%)	3 (12%)	8 (32%)	10 (40%)	3 (12%)	25 (100%)
Budget allocation for disaster training	0.0%	0.0%	8 (32%)	6 (24%)	11 (44%)	25 (100%)

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
activities						
Budget allocation for disaster preparedness and response	0.0%	1 (4%)	6 (24%)	12 (48%)	6 (24%)	25 (100%)
Budget allocation for renovation/repair/rebuilding after disaster	0.0%	1 (4%)	7 (28%)	9 (36%)	8 (32%)	25 (100%)
Budget allocation for monitoring	0.0%	1 (4%)	12 (48%)	7 (28%)	5 (20%)	25 (100%)
Budget allocation for supporting the students with disability (special needs)	0.0%	3 (12%)	11 (44%)	4 (16%)	7 (28%)	25 (100%)

Table 3 shows how much the institutional issues become significantly important for creating school safety. Accumulating the score from "Agree" and "Strongly Agree," there are five most significant factors contributing to the production of school safety according to the school practitioners in Santikhiri Wittayakhom school, as follows: Budget allocation for disaster preparedness and response (72 percent), preparedness and emergency management plan (68 percent), Disaster Information (68 percent), Budget allocation for renovation/repair/rebuilding after the disaster (68 percent), and Recovery management plan (64 percent). The table shows that Budget allocation for disaster preparedness and response becomes the most important factor from the institutional issues for the school to produce school safety for the forest children in Doi Mae Salong. Table 4 below further indicates the progress of Santikhiri Wittayakhom school in producing a safe space through the physical conditions in the Doi Mae Salong area.

Table 4. Physical Conditions

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
Physical Conditions						
Regular on school buildings, facilities, equipment, and dangerous materials	0.0%	0.0%	9 (36%)	11 (44%)	5 (20%)	25 (100%)
Safety building codes	1 (4%)	3 (12%)	9 (36%)	8 (32%)	4 (16%)	25 (100%)
Emergency exit door	0.0%	3 (12%)	8 (32%)	7 (28%)	7 (28%)	25 (100%)
Evacuation shelter	0.0%	1 (4%)	9 (36%)	11 (44%)	4 (16%)	25 (100%)
Damage to infrastructure, facilities, and equipment by disaster	0.0%	2 (8%)	10 (40%)	9 (36%)	4 (16%)	25 (100%)
Emergency supplies (emergency bag, storage food, water)	0.0%	5 (20%)	5 (20%)	10 (40%)	5 (20%)	25 (100%)
Renovation/repair of damaged facilities and equipment	1 (4%)	3 (12%)	6 (24%)	12 (48%)	3 (12%)	25 (100%)

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
Physical Conditions						
Environmental protection campaign to create the hygienic school environment	0.0%	0.0%	7 (28%)	12 (48%)	6 (24%)	25 (100%)
Regular checks on hazardous material and food safety conditions	0.0%	4 (16%)	8 (32%)	6 (24%)	7 (28%)	25 (100%)
Collected garbage and recycling system	0.0%	2 (8%)	11 (44%)	9 (36%)	3 (12%)	25 (100%)

Table 4 shows how much physical conditions become significantly important for school safety. Accumulating the score from "Agree" and "Strongly Agree," there are five most significant factors contributing to the production of school safety according to the school practitioners in Santikhiri Wittayakhom school, as follows: Environmental protection campaign to create a hygienic school environment (72 percent), Regular on school buildings, facilities, equipment, and dangerous materials (64 percent), Evacuation shelter (60 percent), Emergency supplies (emergency bag, storage food, water) (60 percent), and Renovation/repair damaged facilities and equipment (60 percent). The table shows that the Environmental protection campaign to create a hygienic school environment becomes the most important factor in the physical conditions of the school to produce school safety for the forest children in Doi Mae Salong. Table 5 below further indicates the progress of Santikhiri Wittayakhom school in producing a safe space through external relationships in the Doi Mae Salong area.

Table 5. External Relationships

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
External Relationships						
Collaboration with Local Government	0.0%	2 (8%)	6 (24%)	12 (48%)	5 (20%)	25 (100%)
Support from the local community	0.0%	1 (4%)	4 (16%)	10 (40%)	10 (40%)	25 (100%)
Meetings with the local Department of Education	0.0%	0.0%	8 (32%)	9 (36%)	8 (32%)	25 (100%)
Meetings with local people committee	0.0%	1 (4%)	11 (4%)	9 (36%)	4 (16%)	25 (100%)
Communication system	0.0%	2 (8%)	10 (40%)	9 (36%)	4 (16%)	25 (100%)
Early warning from local government	0.0%	1 (4%)	7 (28%)	10 (40%)	7 (28%)	25 (100%)
Location of school in the local community	0.0%	0.0%	6 (24%)	9 (36%)	10 (40%)	25 (100%)
School for the local community shelter	1 (4%)	3 (12%)	3 (12%)	13 (52%)	5 (20%)	25 (100%)
School participation in disaster activities	0.0%	2 (8%)	10 (40%)	11 (44%)	3 (12%)	25 (100%)

Items	Strongly Disagree	Disagree	N/A	Agree	Strongly Agree	Total
External Relationships						
held with the local community						
School involvement in disaster management	0.0%	1 (4%)	8 (32%)	7 (28%)	9 (36%)	25 (100%)

Table 5 shows how much external relationships become significantly important for creating school safety. Accumulating the score from "Agree" and "Strongly Agree," there are five most significant factors contributing to the production of school safety according to the school practitioners in Santikhiri Wittayakhom school, as follows: Support from the local community (80 percent), Location of School in the local community (76 percent), Meetings with local Department of Education (72 percent), the school for local community's shelter (72 percent), and Collaboration with Local Government (68 percent). The table shows that Support from the local community becomes the most important factor in the external relationships for the school to produce school safety for the forest children in Doi Mae Salong.

4. DISCUSSION

The tables resulting from the questionnaires show the most important factors to produce school safety (perceived) for the forest children in Doi Mae Salong from three dimensions of Institutional Issues, Physical Conditions, and External Relationships are Budget allocation for disaster preparedness and response, Environmental protection campaign to create a hygienic school environment, and Support from the local community. The educational personnel explained that regarding budget allocation for DRR in Thailand, at the central level, government expenditure relevant to the disaster was estimated at 0.9 percent of GDP (Gross Domestics Products), with the percentage of budget allocation for disaster-relevant is divided by three criteria such as key ministry budgets, type of investment, and functional purpose. Education is included in the key ministry budget, and school budget allocation is included if schools have disaster awareness in the curriculum. However, most disaster-relevant expenditure was allocated to post-disaster relief, reconstruction, and recovery, primarily in response actions. The sole budgetary resources come from the central government, which provides funds to assist plan creation for the province government at least once a year to guarantee the plan's efficacy and application.

As a result, command-and-control methods remain a top-down approach (vertical direction), and the school still finds it challenging to maintain a disaster preparedness program if it lacks budget allocation. Likewise, the Doi Mae Salong area is in an upland landscape where various ethnic minority groups migrate and practice different forms of shifting cultivation. The school executives explained that environmental protection campaign is essential for the school to keep in line with the reforestation programs and enhance livelihoods without damaging forest ecosystems. Irrevocably, support from the local community is critical as well. From the previous experience of flash flood and landslide disasters in the school environment, the local community pulled together and created their self-help initiatives to ensure the safety of the school children by sharing foods, updating information to school members, and preparing building materials to avoid further destructions by the hazards. The support from the community reduced the full dependency on governmental support that might come later after the emergency period.

Ford (2017) examines the space of educational institutions produced as planned

habitats in public spaces. Thus far, these spaces are historically occupied and inhabited in differing ways. School is everyday life in a social space where lived-conceived-perceived spaces are intertwined with the habits, the landscape, and the building itself. In the case study of Santkhiri Wittayakhom school, the lived space describes the everyday lives of the inhabited space of the Doi Mae Salong forest landscape situated in a socio-ecological transformation due to the historical materialism of ethnic migration and state-led developmentalism projects. The conceived space describes the institutional arrangements from the global agenda to the local government level in coping with the rapid onset of climate disasters' threat toward resilience. Especially in Thailand, the current direction of climate change policy at the national level is to deal with the complexities and uncertainties of disaster risks by growing institutional collaboration and community participation to enhance resilience for sustainable development. In contrast, the perceived space describes the socio-ecological reality of a rural school in the Doi Mae Salong forest landscape between the contradiction of lived space and conceived space. As shown in Figure 4, in the Spatial Practice at the school, the production of school safety practice is intertwined with budget allocation for disaster preparedness and response (institutional issue as *l'espace concu*), environmental protection campaign to create a hygienic school environment (physical conditions as *l'espace percu*), and support from the local community (external relationships as *l'espace vecu*).
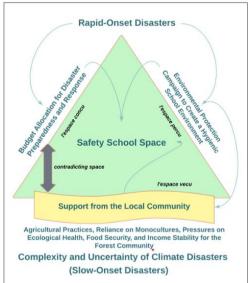

Figure 4. Production of School Safety Space in Santikhiri Wittayakhom School, Doi Mae Salong

The space at the village school, by applying the lens of rhythmanalysis, is a dialectic of "what is happening" and "what is being prevented from happening" (Cervone, 2017). To Lefebvre, a place embedded in "spatial practices" can be consisted of two contradicting spaces: "lived spaces" appropriated by citizens for everyday values and "conceived spaces" produced by planners to create exchange values in design and policy. In the lived space, "what is happening" is climate-related disasters that occur in multiple ways in complex and uncertain manners. Complexity describes the characteristics of a complex system that includes interactions between people and all physical items in the environment, and it can emerge as a result of hazard multiplicity

interlinking (Djalante & Lassa, 2019). On the other hand, uncertainty stems from a lack of knowledge and experience with previous disasters, and it frequently leads to hasty decisions about policies or programs (Kartez & Lindell, 1987). Climate change, for example, will affect hydrometeorological trends and other risks. When climate change exacerbates specific hazards in extreme climatic events, the risk of tragedy grows even more.

Figure 5. Rainfall-Induced Landslides (March 7, 2022) along the main road to Santikhiri Wittayakhom School in Doi Mae Salong, Chiang Rai province

In Doi Mae Salong forest, a landslide caused by heavy rain, flooding, monsoons, and typhoons is a severe threat that might cause calamity in this hilly region. Landslides happen in the highlands on steep slopes with no internal balance and hillsides with little tree cover to absorb rainfall (Dechkamfoo et al., 2022). As a result, the disastrous occurrence has caused an estimated economic loss of 15 million Baht (UNICEF, 2016). However, in a rapid-onset scenario, landslides are not the only disaster that has severely caused most disturbances. Land and forest degradation in the area may also result in immense and long-lasting impacts on the livelihoods of individuals, communities, and the environment. According to studies, changes in the intensity, frequency, and duration of catastrophes demonstrate a link between climate change and natural disturbances in forests (Baker, 2009; Turner et al., 2003 Dale et al., 2001) to biotic, abiotic agents. Climate change's regional impacts, particularly when combined with other land-use pressures, may be sufficient to overwhelm the resilience of even huge regions of primary forests, forcing them into a permanently altered state (Thompson et al., 2009). In Doi Mae Salong, increasing temperatures between day and night, implying higher extremes, harms upland crop output by altering the flowering and seeding stages.

Climate change shapes the forest of Doi Mae Salong with longer periods of drought and more extreme rainfalls and thunderstorms. Warmer and drier conditions facilitate fire, drought, and insect disturbances, whereas warmer and wetter conditions exacerbate wind and pathogen disturbances (Dale et al., 2001). Despite a severe lack of information and support services in the area, changing climate change puts pressure on farming operations, crop patterns, and resources in Doi Mae Salong (Shrestha et al., 2017). In Thailand, a drought might be meteorological, caused by low rainfall and seasonal climate variability, but it could also be hydrological with the lack of water resources accessible to the people. Drought can affect humans and natural ecosystems in any climate (Ding et al., 2011; Saadati et al., 2009). Drought is a slow-onset natural disaster in which economic, environmental, political, and social forces interact with meteorological events (Zarafshani et al., 2007). Human activities (i.e., urbanization and industrialization) have threatened the important natural water resource and groundwater, contributing to the shortage of water supply in urban and rural areas

(Seeboonruang, 2016). The economic, social, and environmental costs and losses associated with the slow-onset drought in Thailand are also significant to the agricultural environment. However, the repetition pattern of the institutional support on the budget for the DRR at the school is mainly allocated merely for rapid-onset disasters. The lack of water from drought in the rural school has not been a top priority for the climate policy in educational school safety in Northern Thailand.
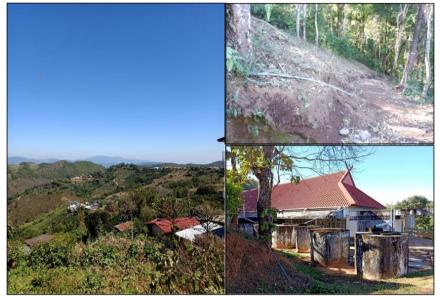

Figure 6. Santikhiri Wittayakhom school area is in a drought period with limited access to the water sources

The field study found that climate-related disasters affected vulnerable children of the Doi Mae Salong forest. Referring to the study by Peek et al. (2017) about the vulnerability dimensions of children in a hazardous situation, physical response and sociodemographic characteristics of forest children affecting the level of susceptibility to disasters. Regarding physical response, the school executive explained that the local government annually supports the school's DRR training and evacuation drills with a similar rhythm to responding to rapid-onset-based disasters. The curriculum implemented at the school has also been integrating routine physical activities inside the school through sports and morning exercise. Moreover, the local government allocated the budget under the National DRR scheme to support school safety building in all areas of Thai provinces. The policy reflects the conceived safety space from the policymakers concerned about the impacts of the rapid onset disaster, like a landslide. Meanwhile, the environmental protection campaign to create a hygienic school environment (physical conditions) and support from the local community (external relationships) are also vital to ensure a safe space from climate disasters for the rural students at the school due to fact that in the lived space, the hazardous experience from climate disasters to the schoolchildren is not limited to the rapid onset disasters. Teachers in the school explained that when the drought came, the students had to return to their homes whenever they needed to use the toilets because the water system in the school was fully disturbed. The girls felt more difficult situations since they already had their menstrual cycle at their Matayom level (Secondary Education) when access to clean water was essential for their hygiene. Concurrently, the teachers also

had to buy water for personal use with no supportive budget allocation to cope with the water scarcity in the school environment. In this matter, sociodemographic characteristics contribute to the level of susceptibility to disaster identified concerning particular hazard risks in slow-onset scenarios. For example, the water scarcity issue is "what is being prevented from happening" in the school safety priority in Doi Mae Salong forest. The contradiction between conceived (policy) and lived (community experience) is clearly shown in institutional issues focusing merely on the impacts of rapid-onset disasters and marginalizing children's needs to access hygienic sanitation and clean water during the slow-onset disaster occurred.

5. CONCLUSION

Finally, transforming the village with modernization progress under globalization and development toward resilience from climate threats has created a phenomenon that Lefebvre (2003) describes as the urban fabric, the manifestations of the dominance of the global idea over the countryside. Lefebvre's notion also highlights connections between power and space to map forest spatiality of everyday life situated between rural landscape and global threats to show uneven development for the village school to cope with ecological changes caused by climate change for the forest children. Disaster resilience for sustainable development would be ineffective unless the local community engaged in more extensive social networks. School pupils may benefit from education regarding preparedness knowledge, attitude, and successful emergency mitigation (Cutler & Lleras-Muney, 2010). By strengthening students' understanding of the link between preparedness and disaster risk reduction, schools can aid individuals in taking precautionary measures. In addition, schoolchildren who have received disaster education may be more prepared to take the necessary precautions. Recent research suggests that education may influence people's time preferences, with more educated people being more patient and goal-oriented, investing more in their health and education in the future (Oreopoulos & Salvanes, 2011). Preventative measures requiring long-term investments may be hampered, such as catastrophe insurance. As a result, governing the climate policy and implementation should strive to improve the efficacy of DRR policies in all sectors, including rural schools, for both DRR scenarios of rapid onset and slow onset disasters.

Ethical Statement: The authors firmly state that this is our original manuscript that has not been published anywhere before, and it is not currently under review or being considered for publication by other journals. All authors have evaluated this publication's contents and given their consent to participate in the study. Moreover, the authors confirm that there are no other individuals who satisfied the criteria for the authorship but are not listed. Finally, the authors certify that the authors conducted no experiments involving human participants or animals in any component of

the work reported in this manuscript.

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