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Living in the Arid Dryland through the Eyes of Young People in East Nusa Tenggara: A Narrative Study

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Abstract. It is undeniable that humans and the environment interact with each other. The environment affects of people's behavior who inhabit a place, and conversely, human behavior affects the environment. For example, an arid environment poses unique challenges to the people living in the area. One of the biggest challenges is the need for water. Individuals must adapt to survive in dry environments and limited water sources. The purpose of this study is to explore the lived experiences of young people living in arid environments. The selection of young people as the subject of this study is based on the fact that young people are an important element in the fabric of society and the starting point of development. A total of five female and three male young people, living in the dry environment for 17-21 years were involved in the research. A narrative research approach was used to understand the stories of life experiences in the dry environment. Data was collected using in-depth interview techniques. Thematic analysis was used to categorize the informants' personal experiences. The results showed that although some young people migrated outside the area, the dry, barren and rainy living conditions did not make the informants despair and leave their area. The desire to overcome life's challenges but having limited knowledge and skills to manage the dry environment is becoming the main conflict of young people. All informants agreed that the problems and impacts of the dry environment need to be addressed. However, the way young people perceive the problem affects their sensitivity to control over the problem. Three had internal locus of control and five had external locus of control. Further, in-depth research on the meaning of the content of the stories, the existence and role of young people in their environment, for example, still needs to be done.

Keywords: lived experience, young people, drylands, dry climate, narrative

1. Introduction

Indonesia, a Southeast Asian country with a tropical climate, is one of the agrarian nations in the region. With over 191.09 million hectares of land covering various islands, Indonesia has diverse environmental and biophysical characteristics, particularly in agricultural contexts. The country's environmental diversity is reflected in the variety of parent materials, soil types, climates, and topography. Socio-economic factors and local wisdom are also integral components in the utilization and development of land, alongside biophysical elements. Land, as defined, is the Earth's surface, which consists of climate, topography, relief, hydrology, and vegetation. Furthermore, land includes soil, parent materials or mineral rocks, and nutrients, serving as a resource for living beings (Alim, 2022).

One of Indonesia's provinces dominated by drylands with an extreme dry climate is East Nusa Tenggara (NTT), located in the easternmost part of the country. The geographic characteristics of this region have shaped its people's way of life for centuries, influencing every aspect of their existence, from traditional livelihoods to cultural value systems that have evolved amidst such harsh environmental conditions. The dry climate introduces unique challenges, such

as limited water availability, food shortages, and heightened health risks due to dehydration and climate-related illnesses.

Despite efforts to investigate the impact of climate change and environmental conditions in NTT, studies that focus on the lived experiences of young people in this context remain limited. Existing research may highlight certain aspects of these challenges but often lacks the narrative depth needed to holistically understand how young people in NTT face these environmental conditions, how they respond to them, and how these experiences shape their identities and perspectives on the future.

Experiences, as captured through sensory perceptions and stored in memory, can be acquired or felt immediately after an event occurs or after a long period. Experiences can be shared with others and serve as guidance and lessons for human life (Saparwati, 2012). According to Frankl (as cited in Naisaban, 2004), life has inherent meaning, which is not meant to be questioned but rather responded to, as all humans are responsible for living purposefully. This response is not through words but through actions.

Young people in NTT, much like previous generations, constantly face a variety of experiences in their environment, which generate both external and internal pressures stemming from the dry environmental conditions. This generation represents the guardians of the future of the region, tasked with preserving cultural heritage and maintaining ecological balance, while also adapting to increasingly pronounced global climate change. However, this group is also vulnerable due to limited educational opportunities, restricted access to healthcare, and a lack of economic prospects that could provide adequate income.

Therefore, an in-depth study of young people's lived experiences in dryland environments in NTT through a narrative approach is crucial. Such a study will offer valuable contributions to our understanding of the challenges faced by the younger generation in this region while providing a solid foundation for formulating more targeted policies and more effective intervention programs.

2. Method

Location and Population

The study was conducted at Nusa Cendana University (Undana), one of the largest universities in East Nusa Tenggara (NTT), Indonesia. The university was chosen due to the diverse student population, representing various regions across NTT, including dryland areas. The population for this study consists of all active students enrolled at the university, with the sample focusing on students who come from dryland regions and have lived in such environments for a minimum of 15 years.

A snowball sampling technique was employed to select participants. The sample included five female and three male young people, each from different regions, faculties, and age groups. The demographic characteristics of the informants can be seen in Table 1 below:

No	Name	Gender	Age (years)	Study Program	Semester	Region of Origin	Duration of Residence (years)
1	Ef	Female	19	Guidance & Counseling	3	Beutaran, Lembata	19
2	Dn	Male	19	Physical Education	3	Beutaran	19
3	Kr	Female	21	Non-Formal Education	7	Oinlasi, TTS	21
4	An	Female	21	Law	7	Sabu Raijua	21
5	Dd	Male	21	Architecture	7	Sabu Raijua	21

6	Bar	Male	19	Physical Education	3	East Sumba	19
7	Sel	Female	17	Public Health	3	East Sumba	17
8	Mar	Female	20	Guidance & Counseling	3	Nagekeo	20

Data Collection and Analysis

Data were collected using in-depth interviews conducted directly with the participants. The interviews were audio-recorded with the informants' consent. This method allowed for a comprehensive capture of each individual's narrative, reflecting their lived experiences in dryland environments. The analysis followed a narrative thematic approach, where data were coded, validated, and categorized to extract key themes from the participants' personal stories.
The NVivo software was used to assist with thematic analysis, helping identify recurring patterns and organize the data. The thematic coding allowed for the systematic exploration of the informants' experiences, focusing on their perceptions of their environment, their understanding of local values, the risks and vulnerabilities they face, and their thoughts on environmental challenges.

3. Results

The study revealed several key themes related to the participants' experiences of living in arid environments. These include knowledge about the environment, the participants' personal definitions of dryland conditions, local values related to the environment, the risks and challenges posed by living in a dryland environment, and perspectives on courses that are characteristic of Nusa Cendana University. Upon further analysis, the following five themes emerged from the data:

a. Life Experiences in Dry Climates

The informants shared their perspectives on their environment, not only highlighting the limitations of their dry region but also its strengths and the personal significance it holds for them. The challenges of living in a dry area include hot weather, arid and barren land, and limited water availability. Local reservoirs often dry up during the summer, rendering them unable to irrigate agricultural fields. This dry condition affects food security, as agricultural activities depend heavily on the climate. On the positive side, some areas produce valuable commodities such as coconuts, copra, bananas, and economically significant crops like cocoa, candlenut, and vanilla. Here are some testimonies from the informants about their regions:

> *"In our environment, the rain is unpredictable. It comes at uncertain times. During the dry season, most people tend to raise livestock, such as goats. When the food supply runs out, they usually barter for fish from other areas or purchase it. In my opinion, the place is very dry, with erratic rainfall. The income from the area is not enough to sustain life for a full year, and water is also scarce. People see us as living in a dry place with only the sea, mainly fish and other marine products. Unlike the mountainous regions that have more food, which they can sell, we only produce enough for our own consumption" (Ef-1).*

> *"In our village, it's perhaps the driest of all in Lembata. People see the dry land as no longer important for supporting life. It's enough for basic needs, but it's hard to support children's education. Some of the villagers have moved to other places to earn money to send their children to school" (Dn-2).*

"In my area, it's productive with plenty of crops like corn and bananas, but water is a big problem. During the dry season, a truckload of water costs Rp. 500,000 for 5,000 liters. They sell 1,000 liters for Rp. 100,000, so a full truckload costs Rp. 500,000. Most people complain because of the lack of water. One of the risks of living in a dry land is crop failure due to misjudging the rain. If the rain hasn't come yet, and they've already planted, there's no way to afford enough water to irrigate large fields" (Kr-3).

"The weather in Sabu is extreme, but it's extreme in terms of dryness, not cold. My subdistrict has low rainfall, while others usually get rain one or two weeks earlier. My village is extremely dry. I haven't been everywhere in NTT, but from what I've seen, Sabu might be the driest. On a scale of 1 to 10, I'd give it a 10" (An-4).

"We used to have more regular rain when I was younger. But since around the time I was in third grade, the rain has decreased significantly. We rely on wells for water, which used to be closer to our homes, but now many of the wells are nearly dry. The well that my family and several other households use has dried up" (Dd-5).

"Due to the heat, people plant crops that can withstand dry conditions, like pumpkins and sweet potatoes, which absorb more water from the soil. During the rainy season, most people have fields, and they construct water storage ponds to collect rainwater, which they then channel to irrigate their fields" (Bar-6).

"In that area, the land is dry and barren, but during the rainy season, it's not as dry. During the dry season, many farmers plant peanuts, which can be optimized for cultivation during this time" (Bar-7).

"When I reflect on my hometown, I wonder if it will always stay this dry. I hope that people will learn to utilize the dry environment to meet their needs. Friends and lecturers who have visited often comment on how hot and dry Mbay is, even though it's part of the same district as Boawae or Bajawa, which are much cooler" (Mar-8).

b. Plot

The thoughts and feelings that arise concerning the environmental conditions vary among the informants. Several patterns of attitudes toward the dry environment emerged, including:

1. Dependence on Rainy Season Earnings for Dry Season Survival Many people still rely on what they earn during the rainy season to get through the dry season.

   "The availability of food depends on the rainfall, too. If the rain is good, then they can have enough food, but if not, they go without. Usually, the rain starts in November, and by February, it has stopped" (Ef-1).

2. Love for Their Dry Homeland Despite the challenges, some people express gratitude and attachment to their dry homeland.

   "We are grateful because God has placed us here. So we enjoy it, even though it's dry" (Sel-7).

   "Although we were ridiculed when we were younger, we, the local people, still love our village and want to work" (Dn-2).

3. Mixed Feelings About Staying in the Dry Region Some people are content with staying, while others prefer to leave. Many have migrated to Malaysia, leaving land uncultivated.

   "There is laziness, frustration, and sadness because it's too hot to work outside. That is probably the main reason why people don't want to work outdoors" (An-4).

"For us who are used to it, it's normal. But newcomers likely wouldn't be able to stand it" (Bar-6).

"In our village, some people are comfortable staying, seeing it as a normal part of their heritage, while others have family members who have gone to Malaysia. They leave their children behind to go abroad, and as a result, much of the land is left unused" (Ef-1).

4. The Major Problem is Access to Water One of the main issues is the difficulty in obtaining clean water.

   "As for water for daily use, we rely on well water, pumped with a machine. But in the dry season, sometimes the water turns brown because the water level drops. We hit rocks at the bottom of the well because it's so dry" (Mar-8).

   "For me, it's about distance. Most rely on well water. The well is about 20 meters deep, and the distance from the house to the well is far, though I don't know exactly how far" (Dn-2).

5. Low Knowledge of Dry Land Management Some residents lack knowledge about how to manage dry land properly. For example, they use harmful chemicals that reduce soil fertility.

   "The use of pesticides and toxic materials to kill weeds, such as garamason, reduces soil fertility. Over time, the land becomes barren. This may not happen immediately, but after a year or two, the soil degrades, and the area becomes very dry" (Dn-2).

c. Character

The following presents the thoughts and feelings of young people regarding their dry environmental conditions. In general, all informants described their area as dry and hot, making it difficult to farm during the dry season, with plants wilting and rainfall periods being short. As described by Mar:

"The atmosphere there is really hot, especially during the dry season when it's extremely hot, and the plants look wilted. So when it rains, it feels like a new source of life" (Mar-8).

The emotions experienced by the informants regarding their environment are varied. Some expressed happiness because of the strong social ties, tolerance, mutual assistance, being with family, and the attention received from the government. Others felt optimistic, believing that despite the dryness, there are still things that can be done. However, there were also feelings of concern, particularly for the elderly and those without income who struggle to access food during the dry season. Others expressed frustration due to the dry conditions and the difficulty of accessing water, while some felt indifferent, as they had grown accustomed to the situation.

"As for my inner feelings, I am happy because aside from being with family, there is strong tolerance among neighbors. Unlike in big cities where people tend to live independently, in Sabu, cooperation and mutual help are still strong. For example, in the city, you have to buy produce at the market, but in our village, neighbors can share their harvests with each other" (An-4).

"During the dry season like this, we feel sorry for the elderly and those without income, it's really sad" (Ef-1).

The attitudes of young people toward the risks and challenges of living in a dry environment are influenced by their level of education. Those with an education level below high school tend to care less about the challenges in their area, often engaging in drinking and causing disturbances in the village. Meanwhile, young people who pursue higher education are more forward-thinking in addressing environmental challenges.

"They are lazy to go to school. For example, in high school, they start drinking and get into trouble, and then get expelled. Some even get pregnant at a young age and then quit school" (Ef-1).

"For those of us who have completed high school and continued our studies outside the village, our thinking is broader than those who stay behind. When we return, we are more concerned about the environment, while those who stay in the village seem to care less and engage in bad habits, such as drinking" (Dn-2).

d. Conflict

The conflicts that arise are not only between the informants and their environment but also with other people. There is a feeling of sadness when they see dry land left uncultivated, along with a desire to move away but being emotionally tied to their homeland. Internal conflicts within the informants include a desire to bring about change in their environment, but feeling limited by their own abilities, such as a lack of knowledge and material resources. They harbor hopes and dreams of one day bringing about change in their region, participating directly through local youth organizations in greening and cleaning efforts. Conflicts with other people stem from frustration with the unproductive behaviors of young people in the area, which do not align with the environmental challenges they face.

"We are the young people in that area, and although we want to move away, we can't. That's our homeland, so we have to figure out how to manage it, like using water wisely" (Kr-3).

"For me personally, it feels sad, seeing the dry land. It's become common for us to deal with dry land, but it's frustrating to see young people just focusing on drinking. We can't intervene because there are village rules for addressing such behavior" (D-4).

e. Views on Environmental Challenges

The informants have different perspectives on their life experiences. Informants two, four, and five recount their experiences from a personal viewpoint, while the others describe their experiences from the perspective of outsiders or their environment.

"Physically, in terms of mindset, I think people are still reluctant to try. For example, they haven't attempted to process raw agricultural products. They tend to sell them in raw form rather than processing them. I think that's one of the weaknesses in Sabu—the lack of human resources to produce finished goods" (An-4)

"For me, my hometown holds many memories and has produced successful people. So, I hope that those who have become successful will pay more attention to this area" (Kr-3).

4. Discussion

Dry, barren environmental conditions with limited water resources were common themes recounted by the informants. Low rainfall significantly impacts the community's food security and survival. One of the primary challenges of living in arid regions is that low rainfall can lead to decreased crop production and quality, crop failure, selling produce to middlemen at lower prices, reduced food availability, and a general lack of awareness about environmental conservation. Moreover, the hot weather tends to discourage outdoor activities. To overcome these challenges, some residents choose to migrate. Those who remain often engage in rain-calling rituals (lede lewu in Lembata, Kaijo ceremony in Nagekeo) during prolonged dry seasons, or they adapt by engaging in other activities to meet their needs, such as collecting snails, fishing to exchange for food, working in salt farms, selling water, selling summer fruits, or working as laborers in the rice fields. The greatest risk they face is that if crops fail, they have limited options to address the problem.

The environmental conditions and the challenges of living in drylands affect not only food availability but also influence the behavior of the youth. However, ecological behavioral responses can vary depending on cognitive and social factors (Widjanarko, 2019). The specific issues experienced by the youth in response to these environmental challenges include a lack of knowledge about managing drylands and how their attitudes toward the risks and challenges of living in such an environment are influenced by their level of education. This aligns with Iskandar's (2012) view that the lack of environmental education and preservation is a current issue in Indonesia.

Human perception is a crucial variable in shaping behavior toward the environment. One's perception of the environment is formed through their interactions with the world around them, personal experiences, and the information they receive from the media, education, and culture. This perception then influences their worldview, attitudes, and actions in addressing environmental issues. According to Vincent (as cited in Nugrahaningsih, 2015), perception can be influenced by several factors: 1) Past experiences can shape someone's current perception, as people tend to draw conclusions based on what they have seen, heard, or felt before. 2) Desires can influence one's perception when making decisions. 3) People tend to reject offers that do not align with their expectations. 4) Experiences shared by friends can significantly affect someone's perception.

The findings of this study suggest that differences in environmental perceptions reflect how young people view the environmental challenges they face. Those who recount their experiences and environmental issues from a personal perspective tend to have a problem-solving style centered on themselves (internal locus of control). In contrast, those who narrate their experiences from an external or environmental perspective tend to attribute problem-solving to factors outside of themselves (external locus of control). Young people who view the dry environment as a challenge that can be overcome through knowledge and education believe that innovation and technology can help address the problems in their region. This view is consistent with Carrim et al. (2006), who argue that such dimensions reflect the extent to which individuals believe that what happens to them is either within or beyond their control. They come to believe that hard work and personal abilities will yield positive results, fostering optimism in finding solutions within their community.

Some young people also view environmental responsibility as a duty beyond their own control. Those with an external locus of control believe that their actions depend on factors outside their personal control (Landy & Conte, 2004; Martin, Thomas, Charles, Epitropaki & McNamara, 2005). In interviews, informants expressed the need for government and local authorities to assist in solving environmental problems, such as water scarcity, natural resource management, and improving community knowledge on how to transform drylands into viable living spaces. This view aligns with Levenson (as cited in April, 2012), who stated that external locus of control is commonly associated with control by powerful others or by chance and luck. The government is seen as a powerful actor in solving the drought-related problems in their environment, as well as in agricultural, irrigation, and community livelihood initiatives. However, the efforts made by the government are often considered insufficient in addressing these challenges.

Despite the findings, this study has limitations, such as not fully exploring the environmental values held by the youth, which could serve as motivational factors for individual behavior, nor the learning processes acquired from their environment. Environmental behavior demands an interdisciplinary approach, and further research integrating psychological, social, and cultural perspectives on the ecological behavior of youth is required.

5. Conclusions

The narratives of young people regarding the challenges of living in dry environments highlight the importance of managing food reserves to survive. Living in arid, barren regions with low rainfall does not cause all young people to give up and leave their areas. However, some choose to migrate in search of a better life. The conflicts that arise are both internal and external. External conflicts include the limitations posed by the dry environment, such as water scarcity, as well as the counterproductive attitudes of some youth in facing environmental challenges. Internal conflicts occur within individuals who are motivated to change the environmental conditions but lack the knowledge and skills to manage drylands effectively. Perceptions of the dry environment shape different meanings and values for individuals, influencing how young people narrate their life experiences and view environmental problems and challenges. Informants with an internal locus of control perceive the challenges of living in drylands as problems they must solve themselves, while those with an external locus of control believe the responsibility lies with the government. Environmental education is one potential solution to help young people confront the challenges of drylands, manage the environment, utilize available resources, and foster positive ecological behavior.

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