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Education in Risk Management in Two Communities of the Cotopaxi Province

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Abstract

Education in risk management is a fundamental and strategic axis to reduce the impacts of any disastrous event. A case study is used to analyze how educational models can create a culture of risk management that is efficient and effective. The case study was an emblematic territory of Ecuador, the communes of Laigua de Vargas and Laigua de Bellavista, located in the city of Latacunga. The analysis model was qualitative through interviews and mind maps. The results showed an educational system based on a formal education limited only to some subjects, and a disconnection between actors involved in the training of citizens, including a lack of clarity in the topics to be trained, focused mainly only on the explosion of the Cotopaxi volcano as a sample of the immediate response to a natural disaster.

Keywords: *Risk management education, intergenerational education, disaster prevention, risk management, risk communication*.

Introduction

Natural disasters, in the last decades, have generated losses of around US$ 1.5 trillion US dollars and record losses between US$ 250 and $300 billion US dollars annually (UNDDR 2015), transforming risk management (RM) not only in the instrument to build resilience to the event itself and its damages but also as an integral part of the policies of each state. Management should be seen beyond the event response system; it should be understood as an integral cycle composed of four phases, which are integrated by: focus on preparedness, quiescence before the event, and the ability to respond and mitigate the effects regardless of their anthropic or natural origin. The anthropic ones are understood as "*induced wholly or predominantly by human activities and decisions. This term does not include the existence or risk of armed conflict and other situations of instability or social tension that are subject to international humanitarian law*…" (Secretaria General de la Comunidad Andina, 2018). Natural events turn out to be exclusively the triggering force of the disaster (Dufty, 2020), which is expressed according to a single main variable, the social and cultural structure in the territory in which the event occurs (Blaikie 2014, Dufty 2020). On the other hand, Dufty (2020, citing Haque and Etkin, 2012) remarks that social groups should be seen as a positive component, but also as a potentially dangerous component, because, without human beings and their relevant social spheres, hazards are simply natural events and therefore irrelevant. The process of obtaining bioethanol mainly comprises a pretreatment followed by the hydrolysis of the lignocellulosic structure of the biomass to obtain fermentable sugars, fermentation and finally the distillation of the fermented product (Albarracín *et al.,* 2015). Distillation is the final step of bioethanol production, and the purpose of distillation is to separate and purify the bioethanol from the fermentation broth (Xin *et al.,* 2017).

This research aims to study the process of lignocellulosic waste treatments for the production of bioethanol. Following this logic, in the last decades, the States have needed to incorporate this type of

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concept more, implementing in parallel technical answers, new methodological frameworks, updated to the evolutions of the social groups, as it is well evidenced in the United Nations World Assessment Report on Disaster Risk Reduction (United Nation Global Assessment Report on Disaster Risk Reduction, 2022). This report shows that the Latin American region is one of the hardest-hit regions in the world in terms of loss of life and impact on its Gross Domestic Product (UNDDR, 2022). It should be highlighted that this type of impact can also be identified as positive values and opportunities for national internal growth, as Chile has demonstrated with the integration of new building technologies and their economic implementation (Blaikie et al., 2014). In this context, Ecuador is one of the countries most affected by natural disasters since the last decade, and state policies have not been able to take advantage of these circumstances, as in the case of Chile, despite the fact that the national regulatory framework contemplates risk management and recognizes the need to manage it through prevention based on the Constitution of the Republic of Ecuador (CRE, Art. 389). However, nowadays, risk management is not a structured system in the development policies of the state, so that the current risk management is deficient and not well valued by the state, which has reduced it to a single activity of event response, just working in the emergency phase and first response, without implementing an integrated and preventive response (Rebotier, 2016).

The Ecuadorian system is constituted in a hierarchically organized structure, through multi-thematic tables that make up the Operations and Emergency Committees (OEC), which are repeated in a pyramidal mode in all its hierarchical levels of administrative management (communities, parishes, municipalities, provinces, zones and national) in which the national OEC is the decision maker and strategy guide during the emergency phase. The Risk Management Service (RMS) is transformed into a national governing body, as a technical organizational focal point, with the technical and scientific support of some research and monitoring centers for possible natural hazards. Thanks to the regulations in force, RMS can rely on a system of technicians and external specialists, including academia. This system hierarchically organized over time has issued a very limited number of applicable standards, and technical manuals oriented to a real prevention of management in the mitigation and quiescence phase (Rebotier 2016; Twigs 2008). Technical documentation that evidences a lack of knowledge of territorial systems in anthropological and cultural terms, so that the Ecuadorian risk management system does not have a vision and/or structure based on the support and change of cultural patterns and the relationship of society with its territory and natural events.

In this technical prevention system, the following factors necessary to implement real prevention are also missing: 1) Constant communication, 2) Education of the social system, 3) Preparation to the events built based on the socio-cultural patterns of a plurinational system. Of these three points, the social education factor is key to achieving solid prevention in the quiescence and preparedness phase, in order to manage and reduce any adverse effects, and at the same time avoid generating adverse impacts (Blaikie et al., 2014; Rebotier, 2016, Dufty, 2020; Twigs, 2015; UNDDR, 2022). Although, risk management education remains a "borderline" system and little taken into account in public policy systems, constantly being reduced and confused with hazard communication systems (Dufty, 2011).

Through the case study in the Province of Cotopaxi, the municipality of Laigua de Vargas and Laigua de Bellavista, it is necessary to analyze the educational processes, in all their aspects, to analyze how the educational proposal, to which the population is subject, can generate efficient and effective knowledge on risk prevention and management, and make it culturally theirs. It is also necessary to analyze the methodologies applied by the public actors in the training implemented and to be implemented, which should incorporate pedagogical tools according to the target group on issues of collective interest, where one of the expected results is an attitudinal change in the face of reality. The educational model applied

and its impact are analyzed from the perception of the local inhabitants, in relation to their responses to the territorial threats, evaluating two educational aspects: the incidental model and the intergenerational model as an inclusive model of the different population groups. The latter educational model turns out to be strategic for the education of social groups, being linked to the historical memory of relations between the local population and its territory, and more effective due to its particular characteristics. Despite its advantages, the literature does not analyze the intergenerational model in depth (Ojeda-Rosero and Lopez-Vasquez, 2017; 2022; Trujillo 2022). One of the relevant questions of the study is to answer and analyze its results once the instruments are applied in the territory: How are the educational processes in risk management implemented from an intergenerational perspective? How much does the intergenerational perspective affect the training processes?

Risk management education, theories and application limits in Ecuador

Educational models in their broadest framework have been constantly based on an aspect identified as "a social function, of personal, cultural and spiritual enrichment and, on the other hand, as a source of learning for professional life" (Rodriguez D., 1999). Historically, this structure has never taken into account educational models integrated to risk management issues, through models and methodologies that must be inserted in the framework of innovation and bilateral communication by the managers of the social system, in order to achieve effectiveness in disaster response and prevention. According to Dufty (2020), the models identified in the literature on educational modalities in risk management can be summarized as follows: 1) Formal education: Includes all educational activities formally recognized by each state and provided by public and private entities. 2) Non-formal education: training activities implemented outside institutional educational spaces, such as, for example, extracurricular activities, including simulations, seminars, workshops, micro courses and massive online courses, among others. 3) Informal Education: that type of intentional but non-formal education, not organized by public and institutionalized structures, in which the community learns in an indirect and direct way. 4) Accidental or casual education: there are several forms of this type of education that has never been organized, but is generated from daily activities, which includes information that reaches the individual through communications of various nature (Dufty 2020, p10-11).

Intergenerational education is not identified in the previous elements, which cannot be integrated in any of the previous items either, because its model responds to an inter and extra-peer relationship where relationship and learning processes are developed. It should be considered that an individual is normally educated through different modalities, in different phases of life, so that intergenerational education occurs throughout life. Formal education is normally structured until around 30 years of age and the other types of education at a higher age, informal education is given to that group of people who have not been able to have access to formal education or who complement their personal growth. Education, as a constant axis in people's lives, can be an element that supports or limits the understanding of social, economic and political reality, in addition to scientific and technological advances, taking into account that the current social transformations are amplifying accidental education, built by technological systems, which create distortions and amplify information that most of the time is not true. In the previous century, Ecuador was one of the first countries in Latin America to formally include "risk management" courses as a compulsory subject in its formal education. In the new century, due to different educational reforms and the low incidence of natural disasters, risk management education has become a complementary activity to curricular activities, subject to direct relations between the Risk Management Secretariat and the Ministry of Education. The training activities, implemented jointly, have been developed as extracurricular activities, thus being classified as non-formal education, and their

implementation has been strictly linked to some specific hazards, or normally after a disaster in the country or in neighboring areas. Educational models that do not really allow for a real education before hazards.

Risk management, between perceptions and educational processes

In hazard preparedness processes, educational models allow people to have an understanding about the factors that influence the correct responses and reduction of the impacts of hazards, both for individuals and for social preparedness, as well as how these collectives react to outreach, training and education activities prior to crises. On the other hand, hazard mitigation strategies often focus on the characteristics of the hazard itself, seen from its technical aspect, but rarely consider the meaning this has for people or its relationship to disaster risk reduction behavior. In many situations, this relationship is accentuated by the fact that mitigation measures (structural and non-structural) that increase objective safety can lead to overconfidence and risk-avoidance behavior (Adams 1995). Similarly, the dissemination of advances in scientific knowledge, as models of accidental education, within the scope of programs that focus solely on providing information to the public, without considering how recipients might react to that information and whether they will actually use those tools in the future, contradictorily, may also reduce the perceived need for preparedness (Paton 2000).

In these educational contexts, at least two main approaches to risk perception can be indicated, one which could be indicated as the realist approach and the other as the constructivist approach (Renn 2008). The realist approach to risk can be defined as "bringing the perception as close as possible to the objective risk of an activity or event" (ibd, p2). It assumes that there is an external objective world with risks that can be recognized and learned (Rosa, 1998; Rosa, 2008). The solutions to perception problems are therefore from this approach reduced to having a higher degree of information and thus raising the understanding of risk. Risk itself is not questioned, constructivists argue that risk is not objective but subjective and socially constructed (Jasanoff, 1998). In other words, they are models that enable people to cope with non-recurring phenomena. Additionally, it should be taken into account that according to Ojeda and Lopez (2017), intergenerational relationships constitute a fundamental aspect in the emergence and development of the perception of disaster risks; but they emphasize that it is a little explored topic, so it is necessary to deepen in order to achieve a better understanding of human behavior in the face of risks and disasters.

According to these authors, the intergenerational relationship constitutes a frame of reference for the social construction of reality, and therefore, of risk and its perception, since it is these relationships that maintain a collective memory, which each generation retakes as lessons from their predecessors and leaves as a legacy to their successors. It is for this reason that policies and strategies related to risk management must be close to the population and integrate their own psycho-socio-cultural codes so that they can be recognized, identified and validated. From intergenerational work it is possible to know which aspects of risk perception are maintained and which are transformed, as well as the circumstances in which these movements occur. Studying generations implies identifying and characterizing different historical moments of the hazards faced and providing new elements to deepen the characteristics of the stages of the disaster: before, during and after (Ojeda and López, 2017)

In addition to these categorizations, which can be found in the current literature, reported by several authors (Paton, 2000; Wiley and Jasanoff, 1998; Dufty, 2020; Wachinger and Renn, 2010), a first definition of intergenerational education can be given as an epistemological contribution to this study,

so it can be identified as the bidirectional education between individuals of different generations, from the same family nucleus, or social nucleus installed in the same territory, who receive a formal and/or non-formal education, including historical-cultural memories and assume it as their own, educating in turn their closest intergenerational circle, which may not correspond to the family one. Taking into account the fact that in the face of natural hazards the population develops capacities which are "the process by which people and organizations strengthen knowledge, skills, abilities and resources systematically develop their capabilities over time to achieve social and economic objectives" (General Secretariat of the Andean Community, 2018, p. 11), it is here where training processes occur in different meeting spaces, one of them being educational centers and another those convened by public entities.

Municipalities of Latacunga and the Education System

The present study was carried out in two Andean communes (municipalities) of the province of Cotopaxi, located approximately 10 km from Latacunga. The territory of the communes has a population, according to the 2010 census, of 170,489 people, of which 88,188 women and 82,301 men according to the National Institute of Statistics and Census (INEC 2022a), with a projection of 205,624 for 2020. Productive activities in the area are mainly in agriculture and livestock, including cocoa, sweet corn, broccoli, bananas, sugar cane, and cattle, pigs and sheep plantations (INEC, 2021b), based on a territorial structure composed of dispersed complex urban systems and a rural-urban relationship that is still interdependent (Ruiz Rivera and Delgado Campos 2008). There are also educational centers at various levels that meet the needs of the local population. The area is subject to high hazards due to the influence of lahars (Figure 1), and ash fall, as a result of the volcanic activities of Cotopaxi (volcanic stratum). These activities have generated adverse events that have remained in the history of Ecuador as disastrous and catastrophic events, in particular, the explosion of 1887 (d'Ercole, 1989; Sodiro, 1877), of which the effects on the urban fabric of the city of Latacunga are visible today (Kozák and Čermák, 2010).

The territory under analysis is also subject to cyclically recurring natural phenomena such as seismicity, drought, and fires, which are the most reported in terms of incidence. There are also other threats identified in the area, not only of natural origin, but also of anthropogenic type, according to the inhabitants of the sector, due to the increase of criminality and social problems such as drug consumption, effects of the presence of the Social Rehabilitation Center (SRC), coupled with a growing economic instability (Arias, 2020).

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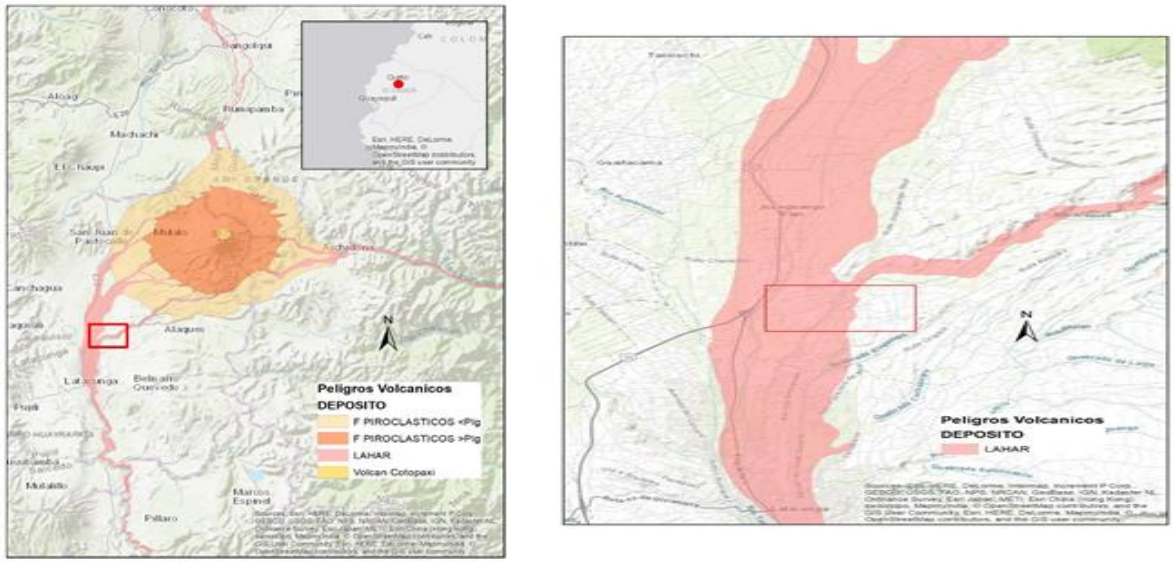

Fig 1. Lahars identified from possible volcanic explosions
Source: Own elaboration

The Evaluation of the Education Models in the Communities

In this socio-territorial context, different research tools were planned in order to analyze the educational models and the knowledge generated, including the perception of risk, applying a qualitative, non-probabilistic critical research with several data collection and validation techniques (Ragin, 2007). Specifically, the starting point was the collection of secondary and then primary information, where the informants were the members of the communities involved, based on participatory workshops, built according to standardized models in the literature (Castañeda, 2016).

The participatory cartographic methodology was also used, through the creation of maps where the participants can express their identification with the territory and the social relations that are exercised on it; in this way, the participants develop agreements on what they are going to show on the map, resulting in a previous consensus useful for the interpretation of reality (Giraldo, 2016). Thus, participatory mapping is understood as the graphic representation of concepts given on the basis of specific questions, as an instrument based on the knowledge of the system by those who live in the territory and can express the facts that occur in it, using graphic forms as a model of expression beyond the concepts and linguistic and verbal conceptualizations which could deconstruct the message required as information.

The technique of closed interviews was also used with key people in the community identified on the basis of their role and function in the community (Castañeda, 2016). The interviews were conducted taking into account the knowledge of the territory and its population, thus coordinating with elderly people who have a history in the community, as well as authorities and those who have a community meeting space, such as business owners.

Table 1. *The reference groups interviewed are shown in*

Group	Systematization	Location	Number of Interviews
1	Risk Management Committee Staff	Laigua Bellavista	1
2	Risk Management Committee staff	Laigua de Vargas	1
3	Focus Group Gonzalo Albán Rumazo Educational Unit	Unidad Educativo Gonzalo Albán Rumazo	1
4	Focus group Simón Rodríguez Educational Unit	Unidad Educativo Simón Rodríguez	1
5	Interview with shopkeepers	Parroquia Alanquez	2
6	Interview store owner	Parroquia Alanquez	1
7	Interview of elderly person	Parroquia Alanquez	3
8	Interviews of community president	Parroquia Alanquez	1
9	Interviews of community policeman	Parroquia Alanquez	1
10	Interview of farmers' representative	Parroquia Alanquez	1

Source: Own elaboration

It was important to work with the Risk Management Committees, since they are responsible for the issue in each canton, and should therefore plan actions and processes for disseminating information on hazards. The approach to educational centers has been done considering that they are "a protective and protected territory that implies the physical, cognitive and emotional care of those who interact in it, especially the NNAJ as subjects of special protection" (Ministry of Education). In this way, it is possible to understand and analyze the perceptions of young people in the face of the reality of threats.

The students of the Simón Rodríguez educational unit were divided by age in order to recover information from peers with the same age range and life experience, thus avoiding that students in higher grades override the voice of the younger ones. This choice is based on the concept of mapping at transversal level the intergenerational population groups present in the study area based on the categorization of the formative typology to which they are specifically exposed; formal and non-formal training implemented at a territorial level. The other interest bearers were chosen according to their representativeness in the social group of the territory under study.

The perception of risk and education in the commune

In the educational centers, mental maps showed the knowledge that students had about natural hazards, where the Cotopaxi volcano was the main actor, which goes hand in hand with the rivers due to the increase in their flow both by the melting of the volcano and the presence of lava flows, ash fall and tremors, among others. But they also included in the debate the presence of the Social Rehabilitation Center, both for the influx of people, as well as for the noise it generates at specific times of the day such as visiting hours (Rodirguez, 2020 interview). One of the weaknesses detailed in the interviewees, through this analysis instrument, was in the identification of evacuation routes, where individually not all of them were able to point out the routes, but when doing it collectively they were able to point out the way they should follow to go to safe areas (Rumazo, 2020 interview). The vision of children and young people is to trust in the training, which they receive in their educational units and they do it permanently, "training

and drills are conducted monthly" (Rodirguez, 2020 interview), and they are clear about the routes and safe places.

When the same exercise was carried out with adults, they stated that: the declaration of emergency was a political issue, that they have not had the necessary information on the threats, and that they do not know the emergency plans, in addition to an empirical analysis on the route of lahars in the event of an explosion of the volcano. In Laigua de Bellavista, the community risk management committee was able to identify different types of hazards such as service stations (gas stations), fireworks factories and landslides that occur during the rainy season, although the most worrisome is the eruption of the Cotopaxi volcano (Bellavista, 2020 social mapping). Adults emphasize the distrust in emergency management because they believe that it is done in a political and not technical manner, which may result in not complying with the provisions of the governing institutions in times of emergency, which goes hand in hand with the recognition of non-governmental organizations to develop training and socialization processes, leaving aside the governmental body responsible for this issue.

According to the interviews reported, it is also evident that there are two types of threats in these groups of interviewees: On the one hand, the natural threat produced by the proximity to the Cotopaxi Volcano and anthropogenic threats; in this sense, the presence of the Social Rehabilitation Center (CRS) is considered a threat to the population. In this specific historical context that Ecuador is living in, the proximity to a prison has transformed into an insecure life transformed into a real threat linked to the psychological pressure factors that have been activated in recent months (Primicias 2021), so this factor of the vulnerability of the population may go hand in hand with the growing insecurity that the inhabitants say exists in the area.

The Community Risk Management Committees, on the other hand, see as a weakness that "*the young population has a low awareness of the threat and therefore does not participate in exercises,*" referring to the simulations carried out in the community (Bellavista, 2020, social mapping). This perception may be fueled by an adult-centric view, understood as the vision that adults have of other age groups, in which certain roles are given to the adult world and others to young people, thus strengthening idealizations and stereotypes of what it means to be young (Duarte, 2012), This vision does not allow for discussion or reflection on the interests of the different social actors, creating or deepening a lack of communication in the processes developed both in the educational center and in the community.

The development of educational processes goes hand in hand with understanding the interests of the target group. Since risk is a collective issue, it is essential that the community's views are aimed at safeguarding the tangible and intangible elements of the territory, placing a strategic question at the center of the discourse: what would be the main impact on the community? In the analysis, it has become evident that adults are most affected by the loss of their way of life, which is centered on livestock and agriculture, in addition to the loss of their homes and property caused by thefts that may occur in the absence of the owners, to which the students contribute with the loss of family and school as elements of value for their lives.

Differential training is an alternative that allows a necessary segmentation for a pedagogical proposal that facilitates the approach to different social groups. In this case, it is divided for students and the community in general, segmenting without having a clear pedagogical proposal could bring a negative effect by failing to have a common vision or coordination within the community, where the designation of responsibilities is a gap that must be solved, especially when the Community Committee evidences more threats such as "the service stations, fireworks factory, landslide" (Bellavista, 2020). Before this

reality, those who intervene in a possible disaster must have a proposal that encompasses all the threats and provides alternatives to the community. On the question, "Is the population prepared for the threats? They answer: "*Before, there were constant evacuations, so people knew where to go... this was done two or three years ago*" (Morador-1, 2020, interview). Another of the inhabitants stated that "*there is no major evacuation plan, everyone is prepared as best they can, but not at the community level*" (Morador-2, 2020, interview). Other people in the community state that they do not know of any community plan, which contrasts with what is said by both the students and the Community Risk Management Committee, who are clear about what to do and where to go.

This may respond to the logic of training and community dissemination that is centered on workshops, which are easier to develop in the Educational Unit since the students are always present; this does not happen in the community. In order to carry out the workshops, it is expected that the villagers will approach and participate, so it is necessary to rethink the strategies and define new mechanisms for community outreach, as stated: "*Training is individual, everyone tries to be trained in order to be forewarned, to be aware of first aid kits, to store and care for water*" (Morador-2, 2020 interview). Others state that they have a training process "A little disorganized" (Morador-3, 2020 interview) perhaps the basic knowledge of having a backpack ready for evacuations is the greatest knowledge of the population. A mother explains that "*my children were given a backpack and a flashlight at school, and we also received the course as parents, in case of the volcano, we have everything ready... just to take it and go out*" (Morador-3, 2020 interview). This confirms that the educational center plays an important role in this risk management process, since it is the community space with the greatest impact on children, young people and their family representatives.

The methodology used focuses its actions on the educational center and from there the indirect beneficiaries are family representatives, who receive information from children and young people, who receive instructions from their teachers on what to do in case of disasters, thus activating a network type of education where the intergenerational is only evident in the beneficiaries. In all this process, the elderly is left behind, who are not comprehensively accompanied and their presence is only made visible in "*the houses in which the vulnerable population places white flags in order to be helped in an evacuation*" (Bellavista, 2020 social mapping). On the other hand, the intergenerational relationship is weakened with a loss of historical memory, due to the new family conformations and the communicative weaknesses in which the process of educational replication from the youngest to the eldest is broken. In summary, it is evident from the interviews that: 1) There are two separate visions and two different realities in the training and education of the community itself, the first given by public subjects, the second in a formal education system. 2) There is an intergenerational education activity for young people, but not for the whole community and much less for the elderly. 3) There is no coordination between subjects and educators, nor a political vision of the use of the different educational aspects that can be used in risk management. Territorial realities in interest bearers create and highlight other types of threats, due to an accidental type of training.

Conclusion

It is evident that the training processes implemented in the area, despite the presence of real threats, whether natural or anthropogenic, are not based or constructed with the local population but standardized on the basis of imposed models, in a basic modality between formal and non-formal education determined by national public policies and applied either by educational centers or by specific programs of the risk management service and in the absence of this, it is assumed by non-governmental organizations. There is no intergenerational educational vision on the part of educators and political interest carriers, what is evidenced in the community is the development of generic training where there

is no differentiation between age groups, with which the pedagogical proposal does not respond to the particular needs, becoming tedious and even repetitive, The lack of an intergenerational pedagogy has not limited the educational centers in preparing students for possible risk events, demonstrating that formal education is the only focal point of a process of awareness of local communities of possible threats in their territory.

Basing education work on drills limits and excludes the integral vision that this topic should have, both in terms of response and prevention. In fact, having a culture of risk prevention should lead to public policies that allow the development of the community in the social, economic and urban areas so that the community has the capacity to react when an event occurs and at the same time has the skills to develop its resilience so that it can respond empathetically to adverse events and reaffirm its commitment to its sector. This risk culture allows the community to determine responsibilities on what to do in the concentration sites when an eruptive event occurs, and how to organize themselves in the possible camps, among other issues that can facilitate coexistence and the return to their homes. If the educational process were given to all age levels, as a formal and non-formal process structured politically and pedagogically, there would be the basic condition of bidirectionality between age groups, which could fully activate the intergenerational training process. So, it was evident that the public system does not have a clear educational proposal that allows to be spread to the community and not only to the educational center, the local Committees do not have the presence of young people, which evidences in a better way the lack of an intergenerational vision in planning and decision making. Therefore, education on risk management remains a formal and non-applicable act on the part of public actors. This is the challenge for an educational approach based on diversity, where facilitators can design proposals according to the age, ethnic and social reality, a challenge that deepens in a diverse, pluricultural and multiethnic country.

From the initial questions raised, it is evident that there is no awareness on the part of public actors of the opportunities that can be created in terms of risk management prevention by an educational system and non-formal education using the principles of intergenerational education. Intergenerational education is a bidirectional educational mechanism that is not anchored to a group or to family relations per se, which creates an opportunity for a domino effect if well-planned and solidly constructed in epistemological and educational terms. From what has been analyzed it was evident that there are two educational levels in the study area; one linked to communication that is standardized and linked to little information, strictly anchored to an activity that will be implemented in the event itself "evacuation route," not working on the before and after, showing the weakness in the application of risk management in the Ecuadorian system, where there is a divorce between prevention in disaster management and post-emergency. The only thing that can be seen is the need to respond at the moment of the event, which is why formal education is lacking in the construction of a cultural identity that can allow one to live with the proximity of a natural or anthropic threat. New questions open up as to how to effectively integrate into political leaders a concept of circularity of risk management so that they can ultimately create a complete educational system that takes into account all the aspects necessary to build a real culture of risk management.

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