



Resilient and Equal: a community built through education

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Abstract

The growing statistics of disasters require new solutions and strategies coming from politicians and civil societies, considering that disasters are a political construction. Being an initial approach, this research paper aims to analyze the hypothesis of a non-structural measure to Disaster Risk Reduction (DRR) based on inclusive education in order to build a resilient and equal Brazil. To do so, this article was divided into four parts, where was first sought to conceptualize disasters and vulnerabilities; then was departed to study educational measures at three different levels of specificity; and, finally, was briefly sketched the Brazilian political scene to reach resilient cities. Through this process, education appeared as a feasible alternative for reducing risks and improving recovery, in terms of increasing response capacity. In addition, if fully accomplished in the three proposed levels, education can contribute to the construction of communities prepared to deal with disasters and aware of preserving the environment. Thus, it should be an education that informs, connects, and disrupts inequality barriers, by proportioning knowledge and spaces to public participation in the process of DRR. If a disaster is created, it can be avoided. The next step would be analyzing how to implement these measures.

Keywords: Disaster Risk Reduction, Response Capacity, Educational Measures, Social Equality, Brazilian Law, Building Resilience, Just-Side Project.



Introduction

Between 2000 and 2007, some sort of disaster affected more than 1.5 million Brazilians (Araújo, 2012), letting the country in the group of those with the biggest number of natural disaster victims. From 1960 until 2008, entities documented ninety-four disastrous episodes in the country, such as floods, overflows, droughts, and landslides, leaving, most of them, uncountable human and material losses (Dutra, 2011).

Brazil is one of the countries that most suffer from this type of incident (Dutra, 2011); and however, the causes are, it is true that the expansion of knowledge and practices about the topic that bring innovations to effective construction of a resilient society became urgent.

The adoption of the idea that disasters are not completely natural and happen through the sum of extreme events and different vulnerabilities brought with it the addition of the human being to the analysis of catastrophes. This new comprehension has turned the solution into a political issue guided by the use of structural and non-structural measures of disaster risk reduction (DRR), based on notions of risk and social inequalities. Still, there is a shortage of really effective, prompt, and low-cost initiatives.

Non-structural measures of DRR are less depreciable and, generally, less cost related to those involving works and buildings, aside from pertaining information, organization, inclusion and equity, adaptability, and preparation actions. In this way, the proposal of an educational measure that gathers a specific disaster education, allied to Freire's critical-transforming (*crítico-transformadora*) environmental education, and a formal education, seems to meet the requirements of an effective, prompt and low-cost non-structural measure that unites elements to DRR raised from vulnerabilities decrease.

Rely on education would be, then, to create resilient, equal, and sustainable communities that harmonize environmental conservancy and the constant population growth, observed in the past few years.



Nevertheless, actions of this nature only take place in committed governments - where environment and people welfare come first - and through its stability and institutionality would be possible to create a collective consciousness about disastrous events. In the Brazilian case, environmental education has been observed in the past thirty years, consolidated from an ecological Federal Constitution and derived acts that determine the responsibility of public power in the provision of educational public policies. However, there are still plenty of things to be done and to be effectuated.

Thus, this scientific paper aims to analyze education as a non-structural measure to DRR that encompasses principles as community training and preparation, interpersonal connection, and information sharing, in order to build a resilient and equal country. This study differs from the others that based it because it starts from an education divided into three levels of specificity. The next step would be analyzing how to implement these measures from a political and governmental perspective.

To do so, this paper was divided into four parts, where was first sought to analyze and conceptualize disasters and the vulnerabilities involved in these events. Then it was departed to study educational measures at three different levels, in addition to programs already implemented in Brazil. Finally, was briefly sketched the Brazilian political scene to reach resilient cities, the last stage of the work. The method of approach used was the deductive, being consulted books, theses, dissertations, scientific articles, reports, and legal documents.

1. Creating disasters: natural events and vulnerabilities

Not long ago, disasters have become an important concern of the international community, appearing in many political plans and gaining specific institutions. The objective was to prevent human and material losses and facilitate recovery and reconstruction after the occurrence of a natural phenomenon. Anyhow, disasters happen since the origin of a sociopolitical life.

Living on Earth has always been a challenge. In former times, people's response to extreme events and natural hazards was personal, causing even more deaths and damages. One of the



first known organization created to respond emergencies collectively arose in 6 BC, in Rome – yet the first disaster of the modern era was an earthquake that happened in Lisbon, in 1755 (Araújo, 2012). In the case of Brazil, disaster management began to take shape due to heavy rains that ravaged the southeast of the country, in 1960. Although, it was just in 2011, after the catastrophe in the mountain region of Rio de Janeiro that strategies and plans to manage risks started to be developed (Trajber *et al.*, 2017).

It is possible to say that a lot has changed to better and many efforts to avoid extreme events from causing damages have been done, including all social sectors. Despite that, actual disasters require even more prepare. With anthropogenic interaction on Earth and the passage from individual to collective lifestyle, extreme events began to cause disasters. This is because disasters are the result of a natural phenomenon - which can also be more frequently due to human responsibility on climate change (IPCC-AR5, 2014) – on a vulnerable ecosystem, occasioning human, material and, subsequently, economic, cultural, and social losses. Thus, a disaster is not the incident itself, but the consequence of it, being its intensity measured in terms of damages caused (Araújo, 2012). In this regard, it is important to notice that the lack of public planning about social issues that nurture inequalities is what creates a disaster; because a vulnerable community is also the one relegated by the public power. The first premise of this analysis is that if disasters are created, they can be avoided.

Occasions such as a catastrophe can be divided into three great stages; interdependent from one another, the results obtained in one stage depend on the efforts and activities accomplished in the other. Within these phases, a chain composed by prevention, mitigation, preparation, alerts, responses, recovery, rehabilitation, and reconstruction, separated in before, during and after a disaster, is established (Araújo, 2012).

According to Araújo (2012), the foremost prior to an event and consequential disaster, comprehends actions of prevention, mitigation, preparation, and alert. Prevent to avoid the resulting harms; mitigate to diminish the impact; prepare to plan response actions and, at last, alert to notify the presence of a hazard. At this stage, the priority should be reducing



vulnerabilities related to physical exposition and response capacity (Saito, 2011). Therefore, the phase before the disaster constitutes a joint of measures tending to reduce risks and forthcoming losses, besides from expanding resistance and resilience of communities at risk.

During or right after an emergency, the author goes on to say, affected communities must be capable to respond, the stage that comprehends actions of evacuation, assistance, search, and rescue. Yet in this phase, activities to restore basic and urgent services to the community maintenance start to be done. Considering the direct relation between response and the group's preparation, an effective response depends on a proper prepare, which demonstrates the mutual relation amid the phases of a disaster. That is because, during a disaster, communities should put into practice what was previously determined and planned, on prevention, mitigation, and preparation phases.

In the last stage, Araújo explains the importance of medium and long-term actions, divided into rehabilitation and reconstruction. Rehabilitation measures still cover reestablishing essential public services and, further, fixing certain social, economic, and physical harm. On the other hand, reconstruction comprises a space of time more distant from the event occurrence, also involving restoring harms, but on an equal or greater level from the existent before the disaster. Finally, the last actions directly depend on the developing status reached by the community in the preceding phases, reaffirming the interdependence among them.

If posterior works rely on previous endeavors, the most important actions and activities are the ones prior to disasters incidence, because they determine what will be done in cases when harms and injuries could not be avoided. Thus, inseparable structural and non-structural measures emerge. Easily attacked, structural measures depend on works, building, and direct environmental changes, accordingly related to the physical exposition of the population. More resistant than the first, non-structural measures refer to urban planning, public policies, communitarian organization (Saito, 2011) and, comprising all the former, education, object of this study.



An embodiment of the importance of prevention measures, arise emergency plans. A base of all disaster management, they serve as a guide to the three mentioned stages, establishing proceedings, materials, and human capital. In other words, “these plans can be defined as the systematization of a joint of norms and proceeding rules, destined to minimize disasters effects predicted to happen in determined areas underdetermined conditions” (Araújo, 2012, pp. 10-12).

Formulated together with the communities, that must understand every measure to be taken; these plans should contain prevention, mitigation, preparation and response, rehabilitation, and reconstruction activities. Therefore, taking into account that disasters are the result of an extreme event on a vulnerable ecosystem, the necessity of putting education as the center of DRR related policies, as a right of all citizens, start to be sketched. Because of this, concepts of risk and hazard are drivers for the adoption of policies and practices that reduce social inequalities and, consequently, vulnerabilities involved in these processes.

Risks are possibilities of damage to occur, not the disaster itself. They are the probability of a determined community being affected and harmed if stricken by natural or anthropogenic hazards (Trajber *et al.*, 2017). Both concepts are directly related and dependent on one another. That is because, reduction of disaster risks through non-structural measures is approached here through education policies, as a way to diminish vulnerabilities that lead to disasters. The reason is that the process operates in a direct relation between hazard, vulnerability, and risk; meaning the higher hazards and vulnerabilities are, the greater will be the risks - and, if concretized, also bigger will be the disaster (Dutra, 2011).

Although, whilst risk is defined through a simple equation (that is, $R=h+v$, “R” standing for risk, “h” for hazard, and “v” for vulnerability), vulnerability is a term that cannot be easily explained. It comprehends a set of factors that make people more exposed to threats; which means being vulnerable is to be sensitive to a threat and weak in face of a damage (Trajber *et al.*, 2017). The intensity of a disaster, then, does not only rely on the magnitude of an extreme event, but also on the degree of vulnerability of the receiving system (Dutra, 2011).



In the past few years, among risk schemes, it has arisen Ulrich Beck's theory, establishing as bonds of modern society the concepts of risk and vulnerability, through the idea of a risk society. Beck, however, set that all the individuals of society are exposed, regardless of belonging to any social condition. Nonetheless, researchers are demonstrating that vulnerability also must be measured in social terms, achieving, so, a comprehension of disasters focused on what determines them (Dutra, 2011).

Dutra (2011), citing Ribeiro (2006), points disasters do not happen by anything. Above all, they are socially constructed processes, validated by political omission and reductionist conceptions. Consequently, they are not essentially natural or physical incidents, but the result of an intersection of social characteristics.

In accordance with Saito (2011), it is possible to refer to a socio-environmental vulnerability, defined as the one in which population is negatively exposed to physical environment processes, even more devastating due to the low response capacity of those affected; thus, the concept is structured on two pillars. The first, physical exposition, becomes smaller according to the structural measures implemented – such as masonry constructions and regular waste collection. Yet, the second pillar, response capacity, among other conditions, report as important the schooling level of those living in areas susceptible to being harmed. The researcher's study pointed out that, additionally to the bigger possibilities of rehabilitation after a disaster, those that have more years of study are more instructed and have further conditions to understand an alert or journal news; which puts in evidence the necessity of educational policies.

Besides mentioned circumstances that refer to educative DRR processes specifically and the ones comprising a larger part that assist indirectly (alike environmental and formal education); the notion that these processes must be inclusive and embrace the ones in worst vulnerability conditions bring poverty added to the analysis.



Willison and Willison (2003, cited in Saito, 2011) states poverty and vulnerability reinforce each other and cannot be disconnected: the poorer a community is, the harsher it will be affected, consequently increasing its poverty; in this context, even more difficult rehabilitation and reconstruction will be.

The usage of this poverty notion has been the stimulus to develop a deeper analysis of the issue. Poverty corresponds to precarious living conditions and unsatisfied basic needs, being a factor of social disadvantage. For this reason, exists a direct relation between social disadvantages, exclusion, poverty, and vulnerability (Dutra, 2011). Furthermore, exclusion and citizenship concepts are inseparable, because the last also refers to the rights of benefiting and participating from public issues such as education and environment, both essential to a decent life and social coexisting. Poverty is the most important variant in face of an excluding and segregating social dynamic, which determines an increasingly vulnerable scenario; marked by survival strategies in the detriment of environmental protection and risk reduction (Dutra, 2011).

Finally, it is important mentioning Whilches Chau's concept of global vulnerability, which sustains the idea of a community facing different sorts of vulnerability all at the same time. Each one of those dimensions is connected from one another; however, for understanding the DRR educational approach, the focus will be on environmental, social, cultural, ideological, political, organizational and, above all others, educational vulnerability. That is because, according to the researcher, these dimensions refer to, respectively, incorrect coexistence of humans and the environment they live in; impoverishment, exclusion, and segregation in the communitarian sphere; a prevention built collectively; active participation of communities in DRR processes and, finally; building a culture of prevention, that involves inclusion, capacitation, information access and orientation (Dutra, 2011).

To put it concisely, a vulnerable group is the one that when exposed to a certain hazard cannot anticipate, handle, resist, and recover from generated impacts; and, as said, this vulnerability is derived from a social construction based on exclusions and segregations that lead to even more social inequalities. Notwithstanding, in front of an extreme event, the response is directly proportional to the level of vulnerability of a given group. Thus, developing the community's



response capacity is diminishing vulnerabilities, essential pillar to the happening of a disaster; this will be studied here through the lens of educational policies on three different levels of specificity.

2. Educational measures and DRR

Stemming from vulnerabilities to explain why disasters happen, several theories were formulated; but to the lack of formulations about how to confront them, the human factor was inserted in the analysis of risks (Blaikie *et al.*, 2004, cited in Saito, 2011). As follows, risk reduction actions to be effective must arise from measures that involve individuals and social groups that are living a situation of threatening. For doing so, education constitutes a privileged way (Trajber *et al.*, 2017).

Correspondingly, this research attempts to analyze and inclusive education to diminish social inequalities and vulnerabilities; this education was here divided into three levels of specificity, that are, i) specific educational programs that provide information and training about the three stages of a disaster; ii) scholar curriculums focused on environmental conservancy, that inserts the subject in all areas of knowledge, and; iii) schooling as a whole, able to increase response capacity - as shown previously. These educational projects are directly connected to public participation in DRR activities and to the creation of resilient spaces. This will be studied here, from a Brazilian experience.

In 1989, the United Nations General Assembly brought disaster reduction as an essential issue, by establishing the period from 1990 to 1999 as the International Decade for Natural Disaster Reduction (IDNDR) (Sung, 2016). The emphasis was to raise community awareness about the importance of prevention and mitigation disaster actions, focusing on vulnerabilities as a whole (Dutra, 2011). From then, Yokohama Strategy, instituted in 1994 on the I United Nations World Conference on Disaster Risk Reduction, brought, confirming the objective of DRR based on prevention actions to more efficient responses, education measures, especially to poor communities as the center of attention for diminishing vulnerabilities that compose the risk. From that Conference was possible to assume some conclusions such as the recognition of the



insufficiency of response actions, the lack of efficient results – in spite of the high cost -, and the necessity of encouraging active public participation on projects for reducing risks and on environmental management (Sung, 2016).

Following the same scopes, in 2005, with an action plan for those next ten years, the II United Nations World Conference on Disaster Risk Reduction happened, instituting the Hyogo Framework for Action (HFA). The HFA reaffirmed the absolute necessity of public participation as a way to reduce the occurrence of disasters. To set comprehension and consciousness, the document brings information and educational measures in order to create security and resilience at all levels, reducing vulnerabilities with the collaboration of the ones affected by the situation of risk. Therefore, one of the HFA objectives gets its origin in three pillars that can be comprised in education, which are, information, dialog, and cooperation [I]¹.

The last United Nations World Conference resulted in one more strategy, besides revising the Hyogo Framework for Action. Nonetheless, in this new strategy, fundamental goals are still the same. The Sendai Framework for Action (2015-2030) keeps the preoccupation and the necessity of the union and collaboration of communities to reduce disaster risks; yet emphasizes education, saying that capacitation about all disaster phases should be included in these programs, which should reach every social level. The strategy also adds professional and non-academic education as important spaces for presenting information and sharing skills (UN, 2015).

Thus, there is evidence of the recognition of educational measures as a way to a DRR that brings popular collaboration as a basis. That is because, building this prevention culture means to guarantee educational processes involving information, orientation, and capacitation about risks, to communities living under threat. This would instigate a critical posture in face of the necessary change of attitudes about environmental issues and social vulnerabilities; and, in this sense, the three educational levels proposed can be an alternative for implementing this transformation.

¹ <http://www.defesacivil.pr.gov.br/arquivos/File/Marco/MarcodeHyogoPortugues20052015.pdf>



On specific DRR educational programs in the Brazilian context, CEMADEN Education stands out (CEMADEN stands for Center for Natural Disaster Monitoring and Alert). The project institutes nets between schools and communities situated on threaten areas to prevent disasters; also, it has the scope of collectively create a culture of risk reduction perception - on the environmental education sphere -, and the construction of sustainable and resilient societies. According to the program, "each participating school becomes a microlocal CEMADEN, a place for research, climate monitoring, knowledge-sharing, and understanding and issuing disaster warnings" [1]². They have also three complementary lines: Citizen Science, Information Sharing, and Com-VidaAção (which gathers schools, society and Civil Defense to participative management and intervention).

On the other hand, non-specific environmental education (EE) was instituted in Brazil by Law 9.795/99, in 1999. According to the document, EE is a process that leads individuals and collectivity to the construction of social values, knowledge, skills, and capacities for environmental conservancy. Hence, recognizing the necessity of an integrated comprehension of complex relations involving the natural world; and establishes the guarantee of information and democratization, the encouragement of participation, and the stimulus of critical consciousness (Brasil, 1999). In this respect, DRR is expected to be addressed within physical, natural, and environmental aspects that emphasize vulnerabilities; which means prevention, on this level, happen through nature conservancy, by warning about deforestation, wildfire, solid waste, land use, and others.

In accordance with Torres, Ferrari, and Maestrelli (2014), this educational process should be inserted on a normal scholar curriculum. However, it must be socially transforming and critical about real situations that limit better conditions of life to those involved. Thus, the subject, product of this education, is formed to act and transform his reality, because he recognizes himself as a part of the totality. From Paulo Freire's lessons, education should be a freeing process, being based on generating-themes [*temas-geradores*] that summarise conflicts and contradictions emerged with the relation between human beings and the world; transforming

² <http://educacao.cemaden.gov.br/site/news/ODkwMDAwMDAwMTMw>



border situations through the dialectic and the questioning around those generating-themes (Freire, 1987, cited in Torres *et al.*, 2014).

According to Freire (2013), the human being is conscious, and when he/she knows something, he/she commits himself to its own reality. However, this consciousness shifts from a naive consciousness to a critical consciousness through education. This critical consciousness is creative and democratic and is related to social justice, for giving possibilities of transformation to all realities.

Besides curriculums based on generating-themes being of a great importance to raising awareness about environment, it is worth mentioning that this process of thematic investigation and, consequently, thematic reduction, have a character essentially participative, comprising a mutual relation between professor and students; turning educational practice into something concrete and based on real situations of the students' lives (Torres *et al.*, 2014).

Finally, with regard to schooling, it is important to mention that without basic knowledge of all fields of expertise normally acquired in school, capacitation activities, information, and alerts about disaster are compromised. That is why studies have shown vulnerabilities related to response capacity are reduced within those with higher schooling levels (Saito, 2011). Nevertheless, education as a totality appeared to be also an important step to the creation of social capital, brought as a determinant to DRR.

Differently than human, physical or political capital, social capital is founded in the relations among persons. According to Saito (2011), when referring to Coleman, social capital is established when people get unite to achieve a common objective. The author pointed out that social capital is created and strengthen through organization, stability, confidence, cooperation, and an identity sense among members. Thus, some sort of associations can be quoted, as religious associations, non-governmental entities, and residents organizations. Specifically in Brazil, 'samba schools' gather persons interested not just on Carnival but also in educational related social issues (e.g. Mangueira Samba School) (Saito, 2011).



Although, schools remain in first place, they are the most important space for developing social capital that individuals encounter during life, since they promote formal education for children and adolescents, and enhance interpersonal relations (Saito, 2011).

In spite of that, these educational spaces are major for developing citizens, in the sense of instigating participative processes. Inherent to the social nature of human beings, the frustration arising from not participating opens space for exclusion and social marginalization. Focusing on reducing disasters, these spheres of participation are necessary to maintain the communities connected and cohesive with a common objective. Because in this way, people can face a number of different adversities on the three phases of a disaster, including the moment to demand the right to proper actions of DRR.

Even though the solution is educative, the path to get to it is political. For this reason, it is necessary to analyze possibilities for the implementation and elaboration of these policies.

3. Brief considerations on the implementation of educational measures in Brazil

Besides of education being a human right - inherent to all human beings, independent of race, sex, nationality or religion -, an instrument to the full expansion of human personality, and a way to the maintenance of peace (UN General Assembly, 1948); education is a fundamental right instituted by the Constitution of Brazil (Brasil, 1998). The document added education in the role of social rights in article 6° and reinforced it in article 225 when legislating about the environment. This article (225, 1st paragraph, subsection VI) states that environmental education and nature conservancy awareness must be promoted in all levels of learning. The same article also says that “everyone has the right to an ecologically balanced environment, people's common use asset and essential to a healthy life, imposing to the government and society the duty to defend it [...]” (Brasil, 1998).



In addition, Brazil is within the members of ISDR, committing himself to improve his capacity for risk prevention and mitigation, as well as for the recovery, reconstruction, and resilience related to disasters. Consequently, strategies and measures in the three disaster stages are a public power attribution, with a special highlight to the institutions of the Civil Defense System.

Governments engaged with social and environmental issues fulfill their role in the elaboration of public policies that aim to diminish risks, inequalities, and vulnerabilities. However, governments with low stability and bad institutionalized political systems, besides not instituting these policies, reduce public reliance, limit the creation of social capital, and discourage communitarian participation.

In the Brazilian case, recently, the former deputy Jair Messias Bolsonaro on his first days as President of the Republic took some measures contradicting nature conservancy, which tends to expand social and environmental vulnerabilities and increase disaster risks (Rossi, 2018; Segalla, 2018).

In face of this situation and considering article 3^o of the National Policy for Environmental Education – Law 9.795/99 - (that states is a duty of public power to promote EE at all levels of learning and the engagement of society to nature conservancy, protection, and improvement); academic community working with EE presented a public declaration, headed to the government, reporting the dismantling of Brazilian EE. The document notes the thirty years of resistance to consolidate an internationally recognized EE that was built through a participative process with society and professionals. The public declaration was signed by 222 entities focused on the theme [I]³.

Thus, regardless of the capacity that education has as one of the most important non-structural measures to DRR, favorable political scenery is necessary for implementing these measures.

³ <https://www.sul21.com.br/ultimas-noticias/geral/2019/01/educadores-ambientais-denunciam-extincao-de-setores-ligados-ao-tema-no-governo-bolsonaro/>



Nevertheless, the social capital destined to the Brazilian EE has allowed that in the private sphere, the encouragement to educational programs continues present in the country, and so the public sphere can also remain with its projects.

Also, is important to mention another innovative project that Brazil is participating, that aims to analyze the state of political measures about DRR (and others) in the country. The project, known by the name JUST-Side (Achieving Justice and Sustainability in the territory through Spatial Data Infrastructure Systems), was created in 2018 and aims to investigate the possibility of using spatial data and cartography together with juridical analysis to diagnose and address scenarios of vulnerability and socioenvironmental and territorial injustice. It sustains the importance of georeferencing to qualify public policies and strategic decisions to governance in spaces and situations that generate vulnerability. The network is supposed to promote territorial justice and the sustainability of public policies according to the United Nations' sustainable development goals (SDG) [1]⁴.

Specifically, one of the SDG chosen is the SDG 11 (safe, resilient and sustainable cities) and the study will make a reference to the so-called *atividades GRAFITE* (Environmental Risk Generators and Focuses of Avoidable Territorial Injustices Activities). Through this definition, the project aims to examine a potential geographic coincidence between a) the activities; b) a socioeconomic vulnerable community; and c) access difficulty to essential public services.

Then, the project is an opportunity to analyze educational policies in the context of DRR to create resilient and sustainable societies. It can also be a support and a tool to illustrate this hypothesis and to investigate the next step of this analysis, which is the possibility of implementing these policies from a political and governmental perspective.

⁴ <https://justside123.wixsite.com/esjustside>



4. Building resilience

In line with what has been said, resilient societies are defined as those prepared to deal, resist, and react to adverse conditions. Furthermore, these societies can recover and return to an original state after suffering an impact; as well as preventing material assets and lives from being lost. Together with vulnerability, resilience is not static and can be changed depending on the social construction of the community and the measures taken for this propose (Sung, 2016). Still, both concepts are interconnected because of being the opposite from one another, taking into account that vulnerability is characterized as a predisposition or susceptibility of being affected by an adverse condition, constituting itself of circumstances that enable the disaster occurrence. Thus, response capacity, a factor that depends on its degree determines a greater or a lower vulnerability can be replaced by resilience capacity.

According to the International Federation of Red Cross and Red Crescent Societies, a safe and resilient community is well informed, healthy, organized, connected, has appropriated infrastructures and services, has economic opportunities, and is able to manage its natural resources (Arup ID, 2011). That is because these societies have the ability of keeping track and managing its risks, constructing and learning from past experiences, and can identify problems, determine their priorities, and act, besides of establishing relations with different actors, in a way that creates a supportive environment (still, these societies count with adequate and prepared structural aspects).

To reach this conclusion, the study analyzed groups of characteristics, as external resources, assets, capacities, and qualities. Within these groups, it is possible to identify elements that were discussed here, such as, respectively, connections and information, human, capital, and political assets, adaptability, flexibility and learning, equity and compromise with DRR; demonstrating that educational non-structural measures to DRR are effective in creating resilient communities.



Conclusion

Regardless of what the political scenario of a country is, the path directed to resilient societies has become urgent. In this way, the adoption of structural and non-structural measures that diminish one of the pillars of a disaster, that is, vulnerability, by means of reducing physical exposition and enhancing response capacity of communities is crucial. However, the necessity of an effective, prompt, resistant, and low costing solution makes of education one of the most feasible alternatives for reducing disaster risks, in terms of increasing response capacity.

This education, if fully accomplished in the three proposed levels of specificity, can contribute to the construction of communities prepared to deal with disasters, aware or preserving the environment, and willing to generate social capital. Thus, it should be an education that informs, connects, and disrupts inequality barriers, by proportioning knowledge and spaces to public participation in the process of DRR.

That is because disasters are no longer considered natural happenings and actions taken before their occurrence, with a preventive character, are directly connected to the effectiveness of activities undertaken during and after the disaster, in cases when it is not possible to fully prevent a catastrophe from occurring.

For this reason, education, as a right of all Brazilian citizens, enable works of prevention, mitigation, preparation, response, rehabilitation, and reconstruction to be more effective, for counting with adequate and vital support from communities under threat.



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